



UNIVERSITY OF INDONESIA

**RISK FACTORS ASSOCIATED WITH COMPLIANCE OF
TUBERCULOSIS PATIENTS ANTI TB TREATMENT
AMONG THE TB PATIENTS OF KANDAHAR REGIONAL
PROVINCE REGIONAL TB DIAGNOSIS AND TREATMENT
CENTER –AFGHANISTGAN**

THESIS

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**MPH PROGRAM
DEPARTMENT OF EPIDEMIOLOGY
FACULTY OF PUBLIC HEALTH
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DEPOK, JANUARY 2012**

ORIGINAL STATEMENT

I declare that this study of Compliance of TB patients treatment among the TB patients of Kandahar province Afghanistan which is further analysis of the study data collected in 2009 is my own performance that I did for completion of thesis and all good sources that have used and quoted have been indicating and acknowledgement of complete references.

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ACKNOWLEDGEMENT

First of all I would like to express from the deepest of my Heart to universities Indonesia, faculty of public health (FKM-kesehatan musharekat) and JICA (Japan International Cooperation Agency for Afghanistan). For their generous assistance and it was generous of them by providing me the opportunity to study for the degree of master of public Health in respected university of Indonesia.

I would like to mention a special thanks and gratitude from the deepest of my hearth to my senior advisor Dr Anwar Hassan, MPH for his nonstop and always intensive supports with great guidance and feedbacks during my study, he strongly supported me to go ahead through all the steps of the study with his academic and remarkable patience corrected the mistakes and I really appreciate and pray for him for always. and I want to say a grateful thank to Dr Mondastri, MD,MSc, Dr Besral, BsPH, MSc, Prof I Made, MD,phD,MPH, Dr Ridwan sayaf Msc,MPH for their nonstop support and excellent feedbacks and good guidance for to improve my study better and better during my research study.

I would like to express a special thanks from dean of faculty of public health, Prof Bambang Wispriyono, Executive director of faculty of public health dr Dian Ayubi, technical administrative staff, tentures and all others which involved in my study which guided me to go ahead successfully.

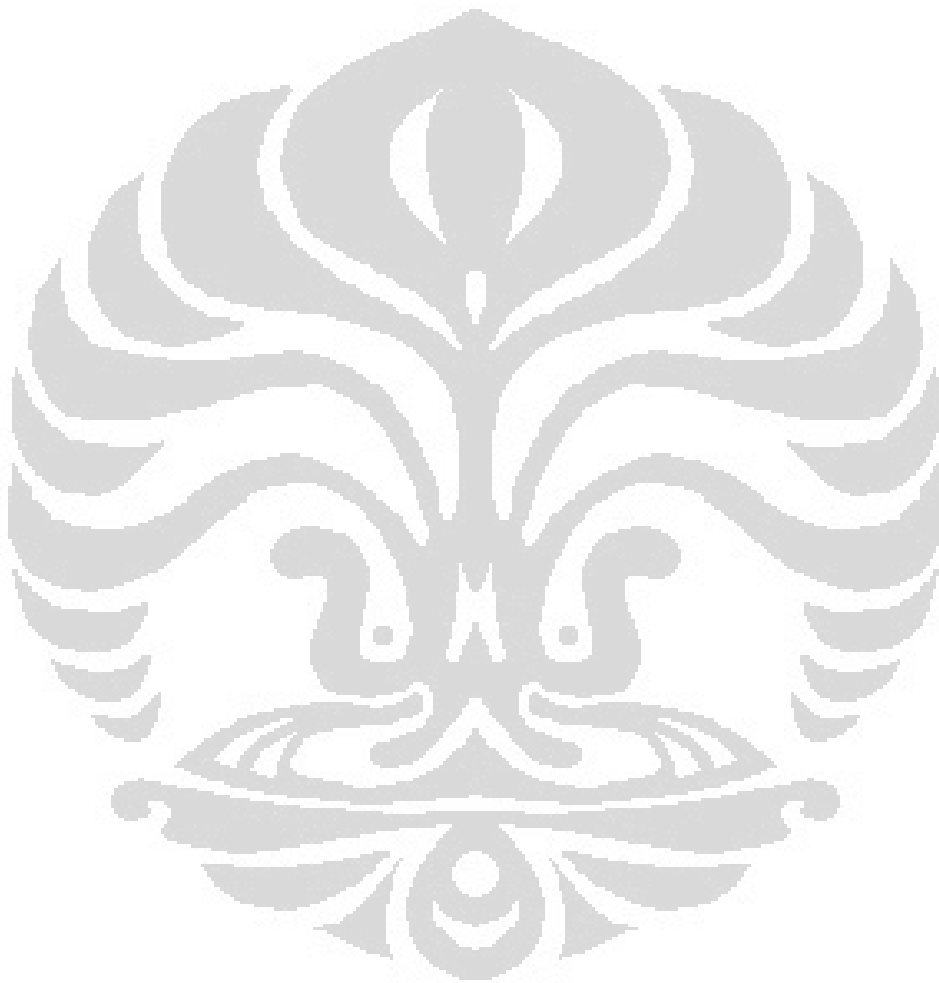
At the end I would like to express my special thanks to my brothers Engineer Abdul Salam sediqi and Eng Abdul Qudus sediqi and and all my sisters and other members that they supported and encouraged me to study hard and take my master degree from university Indonesia.

Structure and organization of thesis

My thesis is comprises seven chapters and chapter one gives and overview of the background information, chapter two literature review and regarding problem statement, problem questions, study objectives and problem analysis diagram.

Chapter -3 describes conceptual framework and operational definitions,

Chapter-4describes methodology (data collection method),,chapter 5 result of my study, chapt 6 is discussion and chapt 7 is conclusion of the study



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ABSTRACT

Compliance of TB patients with anti TB drugs treatment is a universally recognized problem specially in asian developing countries which results at the consequences of the TB treatment compliances, today there are TB cases defaulters, relapses and MDRTB which is mostly occurring in all over the world due to deferent reasons of the compliances, and Afghanistan is one of the 22nd highest TB burden country in the world. The main problem of TB treatment compliance in Afghanistan can be explain at two aspects:

First there would be a high prevalence of TB positivity in country level because of inaccessibility to the health services In the rural areas due to war and low security, second behavioral changes and lack of knowledge of the community about the disease and wrong beliefs and perceptions, socioeconomic factors, socio demographic factors and socio psychological factors, all these factors could be determined and influence the compliance of TB patients among the TB patients in the country.

Objective

To determine what factors associated and influenced the compliance of TB patients with anti TB

Anti TB drugs treatment in Kandahar Afghanistan.

Materials and methods

It was descriptive study, the study was including 243 TB patients participated 79 TB patients interviewed with well structured questionnaire.

Results

TB patients as much as 58.23 % was not good compliance of their anti TB treatment and 41.77% was good compliance of their anti TB treatment, and the compliance rate was higher among those patients who were not good compliance, how ever from small sample size statistic could not detect any significant association.

Conclusion

The high prevalence of TB cases in the country and high level of compliance of TB patients among the TB confirm patients with the factors influencing the compliance of the treatment is essential to control and take measure immediately, the evidence strengthen the need of collaboration to change the behavior of the community properly for ten agers and activate the education and the result attract to focus more and pay attention on the factors influencing the compliance specially for those who have no any access to the health services to satisfy and encourage them for their regular anti TB treatment therapy.

Key words: compliance of TB patients (socioeconomic, socioecodemographic factors), in Regional TB treatment center in Kandahar Afghanistan.



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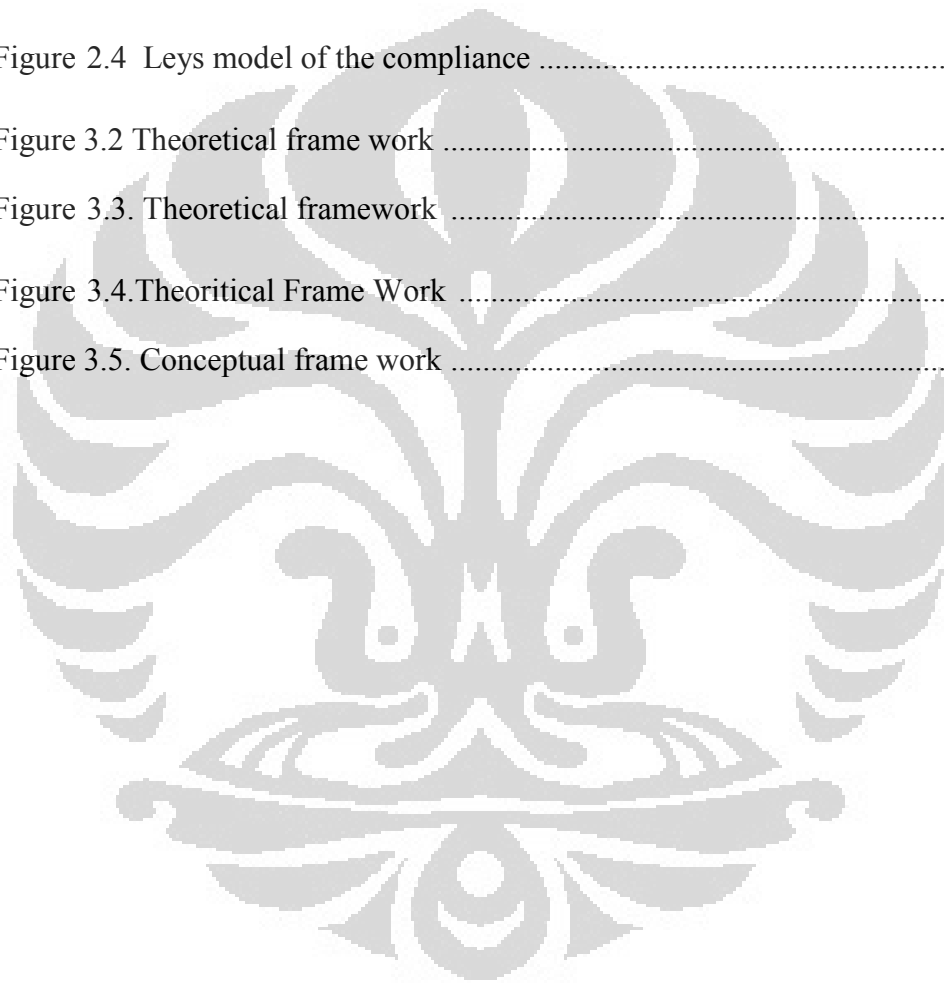
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LIST OF ABBREVIATIONS



MOPH	Ministry of Public Health
WHO	World Health Organization
TBC	Tuberculosis Compliance
MDRTB	Multi Drug Resistant Tuberculosis
DOTS	Direct Observe Therapy or Treatment strategy
LTB	Latent Tuberculosis
MDG	Millennium Development Goals
NTP	National Tuberculosis Control Program
EMRO	Eastern Mediterranean Region
CHC	Comprehensive Health Center
HF	Health Facility
BHC	Basic Health Center
FDC	Fixed Dose Combination
MOJ	ministry of Justice
PHO	public Health Office
PHD	Public Health Directorate
PHCC	Provincial Health Coordination Committee
RTC	Regional Tuberculosis Coordinator
PTC	Provincial Tuberculosis Coordinator
BPHS	Basic Package of Health Services
EPHS	Essential Package of Health Services
JICA	Japan International Cooperation Agency
WFP	world Food Program
SS+	Sputum Smear Positive
SS-	sputum Smear Negative

CHAPTER 1

INTRODUCTION

1.1 Background

1.1.1 What is tuberculosis?

Tuberculosis is a chronic bacterial infection which is caused by bacteria named mycobacterium tuberculosis and generally divided into four kinds as, mycobacterium tuberculosis, mycobacterium bovis, mycobacterium avium, mycobacterium africanum. Which in country Afghanistan is common mycobacterium tuberculosis and in this kind pulmonary is so common

Infectivity of Tuberculosis is from two ways infects the healthy person as

1. Direct (droplet) like coughing
2. Indirect (dishes, cloths, foods.etc

(TB) is one of the main public health burdens in Afghanistan, and ranks 22nd on the list of 22 high-burden TB countries in the world. approximately 40000 new TB cases (WHO) occur annually in Afghanistan, 8,200 died a year(2009) almost 70 percent of Afghanistan's notified cases are women.

Its droplet and One TB positive patient can affect 16- 20 persons in a family or house hold in a year, can spread more than 30 million bacteria in distance of 5-7 meters. as bellow pictures shows direct infectivity of the TB from TB patient to others by direct infectivity.



Figure 1.1 TB infectivity by droplet

As we see the above picture is the TB +HIV+HBV (hepatitis B virus) affected by three killer cases that I diagnosed in the hospital in year 2009 so many times I mentioned here that Tuberculosis is an important reemerging disease with increasing global morbidity and mortality. Tuberculosis control is hindered by patient noncompliance with treatment regimens. To study compliance to antituberculosis drug regimens, and Drug-resistant tuberculosis is a major public-health problem in poor nations. While antibiotics can effectively treat TB, they cause nausea and other side effects, and many patients stop taking them a month or two into the six-month treatment regimen. That can foster drug-resistant forms of the infection, which are deadlier and more expensive to treat. And Afghanistan is ranked 22nd in high TB burden countries in specially in asia .

1.1.2 Global Situation of TB:

This killer and curable disease is not problem only in Afghanistan, it's a worldwide problem that all the world affected to this disease (TB) as An estimated 14 million (WHO 2009) people worldwide are infected with active tuberculosis (TB), which is a disease of poverty affecting mainly young adults in their most productive years. In 2009 there were 9.4 million new cases of TB and 1.7 million deaths, including 380,000 deaths from TB among people with HIV. The vast majority of deaths from TB are in the developing world.

The latest data released by the World Health Organization (WHO) in November 2010 show that the number of new cases continues to fall globally and in five of the six WHO regions. The exception is Southeast Asia, where incidence remains stable. In many countries TB prevalence is declining. Worldwide, deaths from TB fell by 35 percent between 1990 and 2009.

In MDG 6(Milinium Development Goal) mentioned about combat HIV/AIDS and TB from 2001 to 2015 so in my suggestion If current trends continue like this so the world can meet the Millennium Development Goal target for incidence – that new cases should be falling by 2015 – and the Stop TB Partnership target to halve TB mortality by 2015 in comparison with 1990.

There were 9.4 million new TB cases(including 3.3 million women) in 2009, including million cases among people with HIV - There were an estimated 440 000 new MDR-TB(Multi Drug Resistance Tuberculosis). Cases in 2008, and 150

000 deaths from MDR-TBL,TBI(tuberculosis Infection) has traditionally been considered to involve the bacilli remaining in a no replicating state (dormant) in old lesions but still retaining their ability to induce reactivation and cause active tuberculosis (TB) once a disruption of the immune response takes place. The present review aims to challenge these concepts by including recent experimental data supporting.

LTBI (Latent TB Infection) as a constant endogenous reinfection process as well as the recently introduced concepts of damage-response and tolerance frameworks to explain TB induction. These Frameworks highlight the key role of an exaggerated and intolerant host response against *M. tuberculosis* bacilli which induces the classical TB cavity in immunocompetent.

Adults once the constant endogenous reinfection process has resulted in the presence of bacilli in the upper lobes, where they can grow faster and the immune response is delayed. The bellow epidemiologic model shows the primary TB affecting way and LTBI that the death due the TB is cause mainly Relapsed, defaulted and resistant and the way of TB infectivity ,

1.1.3 Geography and demography of Afghanistan

My country Islamic Republic of Afghanistan, is a landlocked country located in the centre of Asia, forming South Asia, Central Asia and the Middle East.^{[7][8]} With a population of about 29 million, it has an area of 647,500 km² (250,001 sq mi), making it the 42nd most populous and 41st largest nation in the world. It is bordered by Pakistan in the southeast, Iran in the west, Turkmenistan, Uzbekistan and Tajikistan in the north, and China in the far northeast. The territory that now forms Afghanistan has been an ancient focal point of the Silk Road and human migration. Archaeologists have found evidence of human habitation from as far back as 50,000 BC.^[9] Urban civilization may have begun in the area as early as 3,000 to 2,000 BC.^[10]



Islamic Republic of Afghanistan
 (Persian) جمهوری اسلامی افغانستان
Jomhūrī-ye Eslāmī-ye Afġānistān



(Pashto) د افغانستان اسلامي جمهوریت
Da Afġānistān Islāmī Jomhoriyat



Figure 1.2 Map of Afghanistan

The country sits at an important geostrategic location that connects the Middle East with Central Asia and the Indian subcontinent,^[11] which has been home to various peoples through the ages.^[12] The land has witnessed many military conquests since antiquity, notably by Alexander the Great, Chandragupta Maurya, and Genghis Khan.^{[9][10]} It has also served as a source from which local dynasties such as the Greco-Bactrians, Kushans, Saffarids, Ghaznavids, Ghorids, Timurids, Mughals and many others have established empires of their own.

The political history of modern Afghanistan begins in 1709 with the rise of the Pashtoons, when the Hotaki dynasty was established in Kandahar followed by Ahmad Shah Durrani's rise to power in 1747. The capital of Afghanistan was shifted in 1776 from Kandahar to Kabul and part of the Afghan Empire was ceded to neighboring empires by 1893. In the late 19th century, Afghanistan became a buffer state in the "Great Game" between the British and Russian empires.^[16] Following the third Anglo-Afghan war and the signing of the Treaty of

Rawalpindi in 1919, the nation regained control over its foreign policy from the British.

After the 1978 Marxist revolution, the Soviet Union began a 10-year war in which over a million Afghans lost lives. The mujahidin insurgency generated by the Marxist government and the Soviet invasion signaled the first sustained entry of Islam into Afghan politics as the religion served as a force to unify the tribally divided multiethnic population.^[19] This was followed by the Afghan civil war (1992–1996), the rise and fall of the extremist Taliban government and the 2001-present war. In December 2001, the United Nations Security Council authorized the creation of the International Security Assistance Force (ISAF) to help maintain security in Afghanistan and assist the Karzai administration. While NATO and other countries are rebuilding war-torn Afghanistan, insurgent groups such as the Taliban and Haqqani network are actively involved in a nationwide Taliban-led insurgency,^[21] which includes countless assassinations and suicide attacks against civilians, Afghan authorities and western forces.^[22] According to the United Nations, the insurgents were responsible for 75% of civilian casualties in 2010 and 80% in 2011, the bellow topic is all about the health system in my country Afghanistan as we see.



Figure 1.3 Healths in Afghanistan

Health system in Afghanistan is in need of improvement due to the country being in a state of civil war for the last 30 years. However, since 2002

when the United Nations began focusing on the situation in Afghanistan, after Operation Enduring Freedom, some improvement was made to the health care system of the country. According to USAID, infant mortality rate has dropped by 33 percent and approximately 64 percent of the total population now has access to some form of health care. Most Afghans live within one hour travel to a health facility. The Afghan Ministry of Public Health deals with matters concerning the health of Afghanistan's population.

Beginning in 1979, military conflict destroyed the health system of Afghanistan. Most medical professionals left the country during the 1980s and 90s, and all medical training programs ceased. In 2003, there were 11 physicians and 18 nurses per 100,000 populations, and the per capita health expenditure was \$28 US dollars.^[3] The nation had one medical facility for every 27,000 people in 2004, and some centers were responsible for as many as 300,000 people. The international organizations provided a large share of medical care. An estimated one-quarter of the population had no access to health care.

At the same time, the physical and psychological effects of war have substantially increased the need for medical care.^[3] Infant, child, and maternal mortality rates are among the highest in the world (about <5y, 154 per 1,000) which is the second in the world after Angola, and by some estimates as high as 275 per 1,000,<5y). In rural areas, one in six children dies before reaching age five. This is because of poor sanitation and insufficient potable water supply, infectious and parasitic diseases such as malaria and diarrhea are very common. Malnutrition and poor nutrition also are pervasive. The drought of 1999–2002 exacerbated these conditions. An estimated 800,000 Afghans are disabled.

Many hospitals and clinics in my country have been built in the over the last decade, with the most advanced treatments being available in Kabul. The French Medical Institute for Children and Indira Gandhi Childrens Hospital in Kabul are the leading children's hospitals in Afghanistan. The Jinnah Hospital in Kabul is also under construction at the moment, which is funded by the Government of Pakistan. There are also a number of well-equipped regional hospitals across the country that were built by the United States Army Corps of Engineers and are run by the Afghan National Army. Despite large-scale

international assistance, the World Health Organization (WHO) expects Afghanistan's health indicators to improve by 2014.

1.1.4 TB Situation in Afghanistan

As we know Tuberculosis is (abbreviated as TB for tubercle bacillus or Tuberculosis) is a common and deadly infectious disease caused by mycobacterium, that 40000 new cases finds every year which estimated in 2008-2009 and 8200 cases die in a year 2008, mainly Mycobacterium tuberculosis. Tuberculosis most commonly attacks the lungs (as pulmonary TB) but can also affect the central nervous system, the lymphatic system, the circulatory system, the genitourinary system, bones, joints and even the skin. Over one-third of the world's population has been exposed to the TB bacterium, and new infections occur at a rate of one per second. Not everyone infected develops the full-blown disease; asymptomatic, latent TB infection is most common. However, one in ten latent infections will progress to active TB disease, which, if left untreated, kills more than half of its victims..

Each year World TB Day (24th march)is celebrating in my country too with a slogan in the last week of March. Slogan for the year 2008 and 2009, which has been adopted by the World Health Organization, is *”I am stopping TB, Million Youth March”*

Afghanistan Millennium Development Goal (MDG) 6, Target 8 is focusing to halt and begin to reverse the incidence of TB by 2020. The Afghanistan targets, endorsed by the Global Stop TB partnership, are as follows:

1. To detect at least 70% SS+ cases and to increase cure rate to 85% by 2010.
2. To reduce TB Prevalence and death rates by 50% by 2015.

The National TB Control Programm of the Ministry of Public Health has adopted the strategy of Direct Observed Treatment Short course (DOTS) for the management and treatment of TB patients. DOTS centers have increased from 30 in 2001 to 1031 in 2008 all over the country. The Case Notification Trend has also increased from 9581 cases in 2001 to 28769 cases in 2007.

1. Incidence (all new TB cases) is 161/100,000 population/year

2. Incidence with Sputum Smear Positive (SS+) cases is 73/100,000 population/year
3. Prevalence (old and new cases) is 231/100,000 population/year
4. Case detection of new SS+ 68 %
5. Treatment success 89%
6. Proportion of female 67%
7. New cases each year 39445
8. Number of deaths each year 7840

67% of all TB patients in Afghanistan are women. Why women are so vulnerable to TB in Afghanistan? Following are the factors that could be blamed for high TB morbidity among women in Afghanistan:

1. Economic Situation
 - a. Completion of treatment course
 - b. High transportation cost
 - c. Cost of overnight facilities
 - d. Family pressures and stress
2. Environmental situation
 - a. Spent in overcrowded dwellings
 - b. Inhaling the unhealthy air (Dust, smoke, etc).
 - c. Contamination through clothes
 - d. Low security everywhere in the country
3. Alimentary situation
 - a. Low food intake by women
 - b. Low protein content of the food
 - c. No access to extra-food
4. Individual psycho-physical situation
 - a. Decrease in immune response
 - b. Deaths & Family trouble
 - 1) Stress
 - a) Psychological
 - b) Family
 - c) Physical (Frequent Pregnancies, hard home work,..)

- d) Social & economical
 - 2) Health situation
 - 3) Diagnosis is often late
 - 4) Relation Doctor/Patient is usually very difficult
 - 5) Medical/Technical training is inadequate
 - 6) Financial support is inadequate

Fortunately MoPH partners have been very generous in this regard. Main donors for the National TB Control Program are WHO, Italian corporation, USAID, CIDA, JICA, GDF, and Global Fund. MoPH Afghanistan is indebted to many individuals and health stakeholders, especially Afghan families and elders, European Commission, UNICEF, Rotary International and Global Alliance for Vaccines and Immunization (GAVI Alliance).

Afghanistan is considered one of the 22nd high TB Burden countries in the world though the Burden of the of tuberculosis is not known in Afghanistan, it has estimated 70000 NSS+ TB, 23000 die each year due to tuberculosis, Afghanistan is globally ranked

2^{0th} among the high TB burden countries and second in the number of the tuberculosis patients in EMRO of world health organization. and incidence of the TB cases were estimated 333 per 100000 population in 2004, prevalence was 661 per 100000, incidence of SS+ 150 per 100000, mortality of TB 92 per 100000, case detection rate for

NSS+ 45% in addition global target is 70% and so low than normal mentioned target, treatment success rate was 86% in 2003, case detection rate all TB cases 43%, case notification rate of new cases and relapse cases 76 per 100000 per year, NSS+ 34 per 100000 per year, in the previous time TB treated cases, MDR rate was 2.5 and new TB cases was 1.8% (WHO 2006) but if compared with year 2004 with report 2009 and 2007 its difference and showing a lot of changes in TB epidemiology in Afghanistan and report of year 2009 regarding year 2007 details as:

1. Incidence all forms of TB = 46000 per year
2. All form of new cases = 168 per 100000 per year
3. New SS- cases 21000 per year

4. New SS+ 76 per 100000 per year
5. HIV + incidence TB (% of all TB cases) 0,
6. Prevalence of all TB forms = 65000 per year
7. All forms of TB 238 cases per 100000 per year
8. Target prevalence for 2015 is 218 per 100000
9. TB mortality all forms 8200 per year
10. All forms of TB death =30 per 100000
11. Mortality target for 2015 is 25 per 100000
12. MDR –TB among all forms of TB cases 3.3%
13. among treated TB cases 36%

These all above mentioned are the problems of TB in Afghanistan and that's why we are still faced in a big problem is that due to the war and conflict since three decades and any survey about the TB compliance not done to know the main factors and reasons.

That is why I studied the compliance of tuberculosis when I was working in the hospital in my province Kandahar regional TB hospital and in my own experience TB activities are still going fast and success by supporting the donors from 2001 after Taliban's regime. And now I wanted to focus mainly on compliance for to describe and identify what factors influencing the TB activities in the country.

1.1.5 Compliance of TB patients

1.1.5.1 What is the compliance?

According to my study in my country Afghanistan Compliance to therapy is one of the important factors that affect the outcome. Non-compliance to self administered multi drug tuberculosis or defaulter treatment regimen is an important cause of failure of initial therapy and relapse in Afghanistan as well as acquired drug resistance, requiring more prolonged and expensive therapy.

1.1.5.2. Global situation of compliance of TB

Tuberculosis (TB) is today considered the most important resurgent disease worldwide. It has the highest morbidity and mortality rate compared to any other single pathogen. It is estimated that one third of the world's population

is infected with *Mycobacterium tuberculosis*. About eight million people contract TB annually, mostly (95%) from developing countries. More than three million deaths are attributed to TB every year; one million of which are women and about 170 000 children. It is also considered the most frequent cause of death among people with acquired immunodeficiency syndrome (AIDS, defaults, relapse, Resistance and failures which all the world faced in this problem.

Drug-resistant tuberculosis is a major public-health problem in poor nations. While antibiotics can effectively treat TB, they cause nausea and other side effects, and many patients stop taking them a month or two into the six-month treatment regimen. That can foster drug-resistant forms of the infection, which are deadlier and more expensive to treat.

Tuberculosis is an important reemerging disease with increasing global morbidity and mortality. Tuberculosis control is hindered by patient noncompliance with treatment regimens. To study compliance to antituberculosis drug regimens, 79 patients diagnosed with tuberculosis during the first three months of 2009 were investigated in that region. The patients were interviewed at TB center during July and August 2009. More than one-third (34.9%) of the patients were not adhering to the antituberculosis drug regimen. Factors increasing drug compliance included: disease symptoms, knowledge about the disease, family history of tuberculosis and hospitalization. More information about the disease and the importance of compliance should be provided to tuberculosis patients at the time of diagnosis and initiation of therapy. Supervision of drug administration by health care personnel stressed.

1.1.5.3. What factors influencing the TB compliance?

1.1.5.4. Global study

Like I mentioned about compliance of TB patients in my country Afghanistan, it's not only the problem in Afghanistan and it's the problem in all over the world as Research has shown that a number of socio-economic factors may impact a person's health. As would be expected, those who live in poorer communities often suffer from greater ill health and shorter life expectancies. People who live in deprived areas are often without access to the best healthcare and struggle to prevent illness more than those in richer communities. This lack of prevention stems from the

poorer education often received in deprived areas and the culture that often pervades within them. Poverty often leads to social exclusion and can affect mental health as negatively as it affects physical health.

Increased morbidity and mortality of tuberculosis have been blamed on neglect of the human dimension of tuberculosis control. One of such factors included in human dimension is non-compliance, a behavioral parameter, which has led to the emergence of multi-drug resistant tuberculosis, and poor treatment outcome. A multi drug resistant survey done in (Nigeria in May 2000). Directly observed therapy (DOT) was employed. Records of the socio-demographic characteristics, treatment categories, complications developed, results of investigations, level of compliance and treatment outcome for the patients were kept. The data for the patients seen between May 1996 and April 1997 were retrieved and analyzed. Those that complied were compared with those that did not comply.

One hundred and ninety nine patients comprising ninety one males and 108 females were seen during the period. They were mostly between the ages of 16 years and 45 years (mean \pm SD = 31.7 \pm 14.98). One hundred and fifty eight (73%) complied and all of them were cured. The only factor that significantly influenced rate of compliance was proximity to the chest clinic. And also about the non compliance in the worldwide fight against tuberculosis, patient non-compliance with treatment protocols affects the success of anti-tuberculosis campaigns and patient health. Numerous studies reported by the National Institutes of Health, Bio Med Central and others on non-compliance with tuberculosis treatment in various populations around the world reveal that factors such as expense, knowledge about the disease, and social and economic factors may play a role in patients' refusal to comply with treatment.

1.1.5.5. Material Factors

1. Material Factors

As the people are poor in Afghanistan and living in deprived areas also generally everywhere. People who live in deprived areas do so because they are poor. Studies by the Department of Health in Victoria, Australia show that poorer citizens tend to engage in physically stressful, low-paid work that is often more dangerous than that done by their richer counterparts. They also tend to live in more polluted environments. Housing in these areas is often cramped and in poor quality, which also impacts an individual's health. Poorer citizens may also have to rely on

state healthcare or the cheapest options in paid healthcare, which could deny them access to the best treatments.

2. *Psychological Factors*

As I mentioned the psychological factors in Afghanistan due to many reasons which is one is war and insecurity everywhere low economy inside the Afghanistan also. Studies done by the National Health Service in the United Kingdom too and have shown that psychological factors and poor choices by citizens in deprived areas also affect health. Mental health problems are far more common in poorer communities as feelings of self-worth decline and stress levels increase. Excessive drinking, drug abuse and smoking are all more common in these areas, too, as individuals chase escapism or fall in with cultural norms. Educational disparities can also lead to poor dietary choices among the poor as they choose cheaper, less healthy options when buying food without fully understanding the implications regarding their health.

3. *Financial Factors*

The same problem as I mentioned in Afghanistan also. According to a National Institutes of Health report on treatment non-compliance in Malaysia too, the cost and difficulty of travel to and from treatment centers may play a role in discontinuing treatment. Similarly, patients forced to miss work due to treatment may become non-compliant from fear of losing employment. Those seen as the economic mainstay of the family may also be less compliant with the demands of treatment.

4. *Knowledge and Education*

As the knowledge and education is low in my country Afghanistan which is one of the factors influencing the compliance of tuberculosis. A study shown and reported by the Indian Journal of Community Medicine associates non-compliance with illiteracy, speculating that illiterate patients may not understand the nature of the disease and consequences of failure to comply with treatment. Similarly, a broader study on therapeutic compliance reported by the National Institutes of Health suggests that patients with lower levels of formal education may be less likely to comply

with treatment, or to understand the risks associated with refusing treatment.

5. *Social and Cultural Factors*

Socio cultural factors are a real problem in Afghanistan that is why majority of the people are uneducated and have no knowledge and have wrong beliefs and homeless people are less likely to comply their treatment, also there is A National Institutes of Health study on non-compliance in Uzbekistan found that those on the margins of society, such as substance abusers and the homeless, are less likely to comply with treatment. In some cultures, suspicion about the Western-oriented treatment model results in non-compliance, with patients expressing a preference for traditional alternatives (in my suggestions traditional alternatives). Other cultural issues involve stigmatization of tuberculosis sufferers, or reluctance to go alone to treatment center. Read more: Factors Affecting TB Compliance.

1.1.6 TB Compliance situation in Afghanistan

As i mentioned about the generally factors such as socio demographic, socio economic, and psychological factors, In Afghanistan compliance with anti tuberculosis chemotherapy poses specific problems because of the epidemiological and socioeconomic context too, in which it occurs Physicians cannot accurately identify noncompliant patients, and it has been reported that patients commonly conceal this behavior from their physician Therefore, members of the study team had to collect the data themselves.

So in my study which i done in 2009 in kanahdar province regional TB treatment center reveals that compliance with ant tuberculosis therapy was significantly higher among those who had not good knowledge about TB, illiterates, low economy, low security, family pressures, beliefs and perceptions, stigma. It has also been documented that when patients know about the natural history of TB, its complications and the importance of complying with drug therapy, their adherence to the prescribed regimen is improved, In a similar study in India in 1992, the authors found that there was an association between the

compliance behavior of patients and their knowledge of specific aspects of the disease. Patients who perceive their illness to be more serious and who believe that treatment will alleviate the condition are more likely to be compliant.

Features of the disease are potential determinants of compliance. Patients with active disease and those with symptoms are more compliant. Tuberculosis patients with other associated chronic diseases, e.g. diabetes or ischemic heart disease, who receive other drugs on a daily basis, were less likely to comply with antituberculosis treatment. This may be attributed to the complexity of compliance with too many drugs, especially for less-educated people, in addition to the increased cost. In contrast to the present findings.

1.1.7 What factors influence TB compliance in Afghanistan?

The reason for the poor compliance is complex, ranging from characteristics of individual patients to qualities of social and economic environment of the patient and the health services.

Beginning in 1979, military conflict destroyed the health system of Afghanistan. Most medical professionals left the country during the 1980s and 90s, and all medical training programs ceased.^[3] In 2003, there were 11 physicians and 18 nurses per 100,000 populations, and the per capita health expenditure was \$28 US dollars.^[3] The nation had one medical facility for every 27,000 people in 2004, and some centers were responsible for as many as 300,000 people.^[3] The international organizations provided a large share of medical care.^[3] An estimated one-quarter of the population had no access to health care.^[3] Therefore many factors are there which influence the compliance of TB patients such as below.

1. Socio demographic factors
2. Socio economic factors
3. Psychological factors

1.2 Problem Statement

As I mentioned above in background and literature review there were many factors that influenced the compliance of tuberculosis in Afghanistan such as socio demographic factors, socioeconomically factors, and socio psychological

factors and such more factors in that situation are can be the main cause of the compliance of TB patients treatment such as low security which is 100% worse everywhere in Afghanistan and threats the community and homeless people, immigrations and refugees, family pressures properly on women because husband is the decision maker to make plan of the treatment stop or continue it, ,low behavior of the community, lowsecurity,suicides , , pre age marriage, worse economic situation of the community, low hygiene of the community, stress and barriers, including these, all are the main cause of the compliance of tuberculosis patients in Afghanistan and the purpose of my study is that to describe the sociodemographic, socioeconomical and psychological factors and barrier associated with compliance of tuberculosis. or not ?that is why we study the compliance of tuberculosis.

1.3 Rational and Justifications

As we know that the vision of public health is “Healthy people in Healthy community “. Health is a Human right and everyone has right to be healthy (HAQ MANUSIA).and is essential for the social and economic development and health is the increase of productivity or according to the WHO health is the complete physical, mental and social well being not merely the absence of diseases so for this purpose TB is a global public health emergency and TB compliance is a global public health challenge, which all the world faced this challenge in Afghanistan is 22nd ranked in high TB burden countries and compliance of tuberculosis a real challenge still due to 3decades war and insecurity in the country everywhere, and social, economical, and political status of individuals, influenced the compliance of tuberculosis there, and 40000 new TB cases finds yearly and death due to TB estimated year 2008 was 8200 patients died.

So if a TB confirm positive patient not treated he / she can affect 16-20 persons in a year, the world health organization shown statistical estimation is done from 2002-2020. 1000 million will newly affected to mycobacterium tuberculosis and more than 150 million will getting sick and 36 million will die because of TB if any control and preventive measures are not strengthly done.

1.4 Benefit of this study

The important point of this study which was collecting and analyzing the data through the EMIC interview among the TB patients in Kandahar province regional hospital Afghanistan for:

1. Identification of factors associated with related compliance of TB patients in the hospital.
2. The interview results will provide the existing epidemiological situation of TB compliance, complimenting the information on epidemiological situation of tuberculosis in the country level of the SS+ patients, default, relapse, failure.
3. The important evidence is for concern the authorities to take immediate measure when they found cough more than two weeks to go to the health center to take sputum and do examination and when confirmed the TB bacilli then take regularly take anti TB medicines.
4. The result would be more attracted authorities to put more attention on high risk of the disease if confirm TB patients stay positive and specially the main focus on high risk group such as, poor's, low socio economic classes, psychiatric disorders, low security, low education and difference ages.
5. To know about the community that how which factors more influence compliance of TB and non compliance of TB among the TB patients.

1.5 Scope of the Study

This descriptive study based on semi structure interview data collection, done by me and my friend dr Abdul Bary Hayrat chest specialist worked in TB regional hospital as doctor same with me together in June/july, august/ 2009

the interview mainly focused on the age, sex, wrong beliefs, socio economical (level of education, income and occupation). and most of the people do not understand about the side effects of anti TB drugs and leave the medicines in half of thier short course treatment, low income is the predominant factors to TB patients because they do not understand about free treatment of the TB and they buy anti TB medicines in private clinics and when they started after one or two

months they can not buy the drugs any more for continuing until 8 months then stops the medicines that can be one of the reasons for treatment default, relapse and MDR (multi drug resistant).

1.6. Research Question

What factors associated with compliance of Tuberculosis (TB)

1.7. Objectives

1.7.1. General Objective

To determine the factors which associated with compliance of TB patients in Kandahar Western Regional TB Center - Afghanistan

1.7.2 Specific Objective

To determine and describe the compliance of tuberculosis in Kandahar Province, Afghanistan. To determine the factors associated with compliance of tuberculosis

To determine related characteristics such as age, sex, education, knowledge, barriers, income, occupations, perceptions and ethnicity.

1.7.3 Definition of Some Key Concepts

Particular interpretations of the following concepts will be used to guide the study:

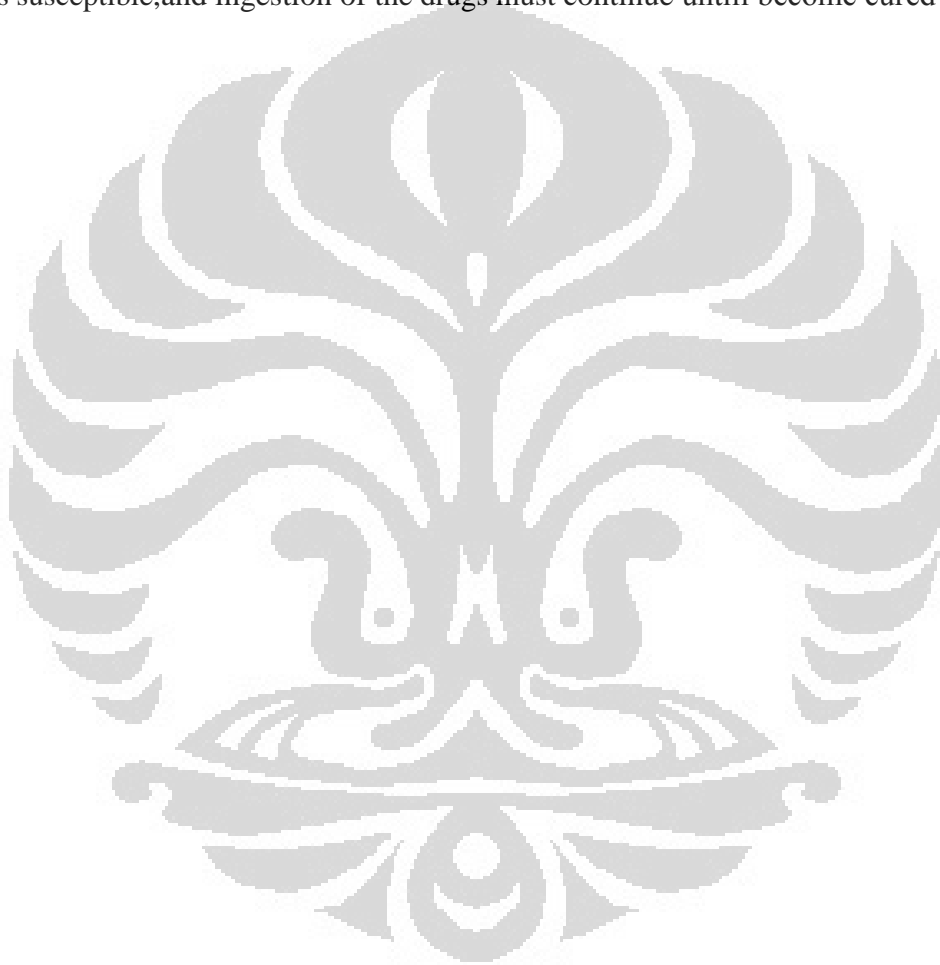
Affecting : making a difference or contributing to something (Oxford University Press 2006:21), in the case of this study to patients taking or not taking their TB treatment.

Compliance : the extent to which patients' behavior coincides with medical advice on how to take tuberculosis treatment (Pandit & Chaudhary 2006:241).

Tuberculosis : a disease caused by Mycobacterium tuberculosis infection (Caminero 2003:24).

A **“Defaulter”**: in this study is a patient who interrupts TB treatment for at least two months after taking the medications for at least four weeks continuously.

Satisfaction: “Patient satisfaction with ambulatory care is important for many people, but it is especially important for patients undergoing treatment for tuberculosis (TB) because they must persist with a long and difficult therapeutic regimen. TB treatment typically requires 3 to 8 medications given daily or several times a week for 6 to 18 months.⁵ Two basic conditions are necessary for successful therapy: the regimen must contain multiple drugs to which the organism is susceptible, and ingestion of the drugs must continue until become cured “.



CHAPTER 2

LITIRATURE REVIEW

2.1 Compliance of TB patients in Afghanistan.

The factors which influencing the compliance and non compliance of the TB patients anti TB treatment among the TB patients in Afghanistan.

2.1.1. Sociodemographic Factors

Since 3 decades war there was not done any TB compliance survey in Afghanistan to identify the factors influencing the compliance and non compliance and the prevalence of this compliance is still not clear and also MOPH of Afghanistan does not have any data for these mentioned issues, so according to the gender of Tuberculosis the incidence of TB is higher in women than men and the reason was not clear after that WHO conducted a study on that why the incidence of TB in Afghanistan is higher among the women than men ?specially in reproductive age among the other result they found that the spread of tuberculosis among the women in Afghanistan is correlated to the structural violence that marks social life, the women's condition often become difficult when they enter their new family that's their husband family (marital status) the husband is decision maker regarding start and continuation of therapy, the husband family is responsible for political and economic balance and decide on therapeutic planning.

Wrong belief of the community about the disease and of its possible curing certainty prevent recovery for example there is this belief that (sincer and manipulating) that there is no hope to recover from TB without a drastic reduction of food quantity so DOTs program led by World Health Organization include an agreement with world food program(WFP) to provide food for the patientS during therapy.

Family barriers, the husband is decission maker, do not want to continue the therapy due to wrong beliefs and low knowledge and, beliefs more and more to the ethic groups such as mullahs. A total of 17,850 children (less than 12 years)

were seen during one year period from 2002-03 at Indira Gandhi Institute of Child Health (IGICH), a tertiary referral centre at Kabul, Afghanistan. In view of the limited resources, the diagnosis were usually made on the basis of patients self symptoms and signs of Tuberculosis history and exams. In Afghanistan women are higher affected to TB than men that's why the some of the point mentioned above and family pressure, husband or parents are decision makers and pre age married, and low education most of the women are house wife and workers no job outside and have no rights to make her own decision about her life. One of the compliance main point is that and also non compliance they even not compliance of her disease and delay diagnosis is the base of non compliance even they have TB but not compliance because of that husband or father is the decision makers..and in Afghanistan age is more important factor because of old ages are susceptible a lot to have MDR-TB comparing to low age properly in those area which are living positive TB patients that's why also the non compliance is the susceptible chance to the default and MDR TB too.

2.1.2 Socioeconomic Factors

The economy of Afghanistan has improved significantly since 2002 due to the infusion of multi-billion dollars in international assistance and investments, and the people have less than one dollar income as well as remittances from Afghan expats. It is also due to dramatic improvements in agricultural production and the end of a four-year drought in most of the country. However, Afghanistan still remains one of the poorest and least developed countries in the world that is highly dependent on foreign aid. The nation's GDP stands at about \$27 billion with an exchange rate of \$15 billion, and the GDP per capita is about \$900.

About 35 percent of its population is unemployed and live below the poverty line, suffering from shortages of housing, clean drinking water, electricity and employment. The Karzai administration along with international donors have remained committed to improving access to these basic necessities by prioritizing infrastructure development, education, housing development, jobs programs, medical care, and economic reform. The replacement of the opium trade, which probably makes up about one-third of the country's GDP, is one of several potential spoilers for the economy over the long term, low education and low

hygienic condition is one of the factor which influence compliance of tuberculosis in the community and also more other communicable diseases, most of the people are unemployed and those who have jobs income is daily less than one dollar and one of the reason of pre age married is the poverty and that's why TB is higher in women than men which directly influence compliance of TB during their treatment.

2.1.3 Psychological Factors

In my country Afghanistan) Knowledge and Attitude of people Towards TB compliance is one of main factors which influence directly the compliance of tuberculosis in Afghanistan and Perception of Barriers in Accessing to TB Services in Two Provinces of Afghanistan, the awareness and knowledge on tuberculosis (TB), ii) knowledge on TB diagnosis and treatment, iii) attitudes towards TB, and iv) perception of barriers in accessing to TB services. The approach adopted for this study was cross-sectional, multi-stage 30-cluster sampling method, face to face interview with adult male and female (aged +15 year) in Badghis and Balkh provinces of Afghanistan. The total sample size was 900. The general awareness about TB was high in both the provinces (around 96%). TB was perceived widely as dangerous (81%), and incurable (85%) by the population in both the provinces. A misperception that 'TB is a disease of female' was also observed in these provinces (78%). Though the knowledge on symptom suggestive of TB (chronic cough) was high (91%), they lacked knowledge on other associated symptoms of TB. Knowledge on microbiological cause of TB was totally absent. However, they had different cultural explanations for the causation of TB. The low knowledge on transmission and prevention was not comprehensive and varied by province and gender. Knowledge on diagnostic test was low, to test sputum was poor (26%). Low Knowledge on place of diagnosis, was lacking. Respondents had also poor knowledge on management of TB (e.g., treatment duration, place of treatment). Tendency to seek care from government facilities for TB treatment was low (18%) in Afghanistan despite TB services offered free at government health facilities. Population had less access to community health workers (CHW) and public facilities for obtaining TB information. TB patients in both the provinces prioritized work over taking TB

treatment. Besides, financial problem, shame and fear of isolation were found to be important deterrents in accessing to TB care. Health education content and materials should be reviewed and redesigned appropriately for disseminating comprehensive information on TB causation, transmission, prevention, diagnostic place and misperception associated with TB as well. A social support network (SSN) should be established within the community to support the TB patients to overcome the barriers which are main cause of the TB compliance is the mentioned points that's why because the people are psychologically not ready to hand with all together.

At least 97 per cent of the women in Afghanistan are suffering from major depression, 86 per cent have significant symptoms of anxiety and nearly a quarter frequently think of committing suicide. Physicians for Human Rights (PHR), in a report on the plight of Afghan women under the Taliban also found out that 42 per cent have post traumatic stress disorder. It was based on the findings of investigators it sent to Kabul for an in-depth study. They surveyed 160 women and also interviewed 40 other women.

the advisor of the president of Afghanistan in healthcare matters who took part in this research said that the reason for 90% of the suicides were acute depression or mental illnesses. the number of women with acute depression in Afghanistan is 28% (nearly 2 million people) of the population of the country.

This research is based on the collection of information and statistics from hospitals all over Afghanistan. Suicides or suicide attempts that had been recorded in hospitals in Afghanistan make a huge part of this research. in Afghanistan since 3decades war and conflict everywhere in the country the people majorities are having stress and high mood depression which has a mostly predominant effect of the increasing of diseases that's why each family in every house and home they lost their members in suicides attacks, bombing, and street face to face conflict, therefore most of the people have such diseases because of not adhering to the treatment and day by day and year by year the curve of the deferent disease are going high in the country which is one of the main reason is wrong beliefs and not adhering to the treatment as such studies shown the problem of beliefs everywhere

in developing countries still problem specially in civil war countries like Afghanistan, Iraq and others Beliefs and not adhering to the treatment study:

Beliefs about illness in terms of the dimensions described by Leventhal et al. (1980, 1997) have been shown to relate to coping. They have also been associated with whether or not a person takes their medication and/or adheres to other suggested treatments. Some research shows that symptom perception is directly linked to adherence to medication. For example, Halm et al. (2006) explored asthmatics' beliefs about their problem, their perception of symptoms and their adherence to medication. The study involved 198 adults who had been hospitalized for their asthma over a 12-month period and identified a 'no symptoms, no asthma' belief whereby people only believed they had asthma when they had symptoms, rather than seeing it as a chronic illness that is ongoing regardless of the level of symptomatology. Further, the results showed that those who held the 'acute asthma belief' were also less likely to take their medication.

In a similar vein, Brewer et al. (2002) examined the relationship between illness cognitions and both adherence to medication and cholesterol control in patients with hypercholesterolemia (involving very high cholesterol). The results showed that a belief that the illness has serious consequences was related to medication adherence. In addition, actual cholesterol control was related to the belief that the illness was stable, asymptomatic with serious consequences.

Some research has also included a role for treatment beliefs. For example, Horne and Weinman (2002) explored the links between beliefs about both illness and treatment and adherence to taking medication for asthma in 100 community-based patients. The results showed that non-adherers reported more doubts about the necessity of their medication, greater concerns about the consequences of the medication and more negative beliefs about the consequences of their illness. Overall, the analysis indicated that illness and treatment beliefs were better predictors of adherence than both clinical and demographic factors. In a similar study, Llewellyn et al. (2003) explored the interrelationships between illness beliefs, treatment beliefs and adherence to home treatment in patients with severe hemophilia. The results showed that poor adherence was related to beliefs about the necessity of the treatment, concerns about the consequences of treatment and

beliefs about illness identity. Further, Seniorand Marteau (2006) showed that greater beliefs about perceived effectiveness of medication were related to better adherence in people with familial hypercholesterolemia (FH).

2.2. Global Study on Compliance of Tuberculosis

2.2.1 What is compliance?

The Compliance of tuberculosis is not only the problem in Afghanistan its in all over the world and there are many studies done properly in developing countries about the compliance of tuberculosis treatment that's why every where is the defaulter, relapse and MDR cases. a study in 1979 shown and defined compliance as 'the extent to which the patient's behavior (interms of taking medications, following diets or other lifestyle changes) coincides with medical or health advice'. Compliance has excited an enormous amount of clinical and academic interest over the past few decades and it has been calculated that 3200 articles on compliance in English were listed between 1979 and 1985 (Trostle 1988). Compliance is regarded as important primarily because following the recommendations of health professionals is considered essential to patient recovery. However, studies estimate that about half of the patients with chronic illnesses, such as diabetes and hypertension, are non-compliant with their medication regimens and that even compliance for a behavior as apparently simple as using an inhaler for asthma is poor (e.g. Dekker et al. 1992). Further, compliance also has financial implications as money is wasted when drugs are prescribed; prescriptions are cashed, but the drugs not taken.

Compliance with ant tuberculosis drugs treatment among tuberculosis patients in Alexandria, Egypt done, Tuberculosis is an important reemerging disease with increasing global morbidity and mortality. Tuberculosis control is hindered by patient noncompliance with treatment regimens. To study compliance to ant tuberculosis drug regimens, 172 patients diagnosed with tuberculosis during the first three months of 1995 were investigated. The patients were interviewed at their homes during July and August 1995. More than one-third (34.9%) of the patients were not adhering to the ant tuberculosis drug regimen. Factors increasing drug compliance included: disease symptoms, knowledge about the disease,

family history of tuberculosis and hospitalization. More information about the disease and the importance of compliance should be provided to tuberculosis patients at the time of diagnosis and initiation of therapy. Supervision of drug administration by health care personnel is stressed.

It has the highest morbidity and mortality rate compared to any other single pathogen. It is estimated that one third of the world's population is infected with *Mycobacterium tuberculosis*. About eight million people contract TB annually, mostly (95%) from developing countries. More than three million deaths are attributed to TB every year; one million of which are women and about 170 000 children. It is also considered the most frequent cause of death among people with acquired immunodeficiency syndrome (AIDS).

Anti tuberculosis chemotherapy should be administered to the greatest possible number of patients in order to cure them, and thereby interrupt the chain of transmission of TB within the population. The most serious problem hindering TB treatment and control is noncompliance of patients. It is believed to delay sputum conversion to smear negative, increase the relapse rates 5-6 times, and help the emergence of resistant mutant strains.

Adherence to treatment requires the active participation of the patient in self-management of treatment and cooperation between the patient and the health care provider. The reasons for poor adherence are multifaceted and complex, but include the characteristics of the individual patient and social and economic factors such as the availability of drugs, communication between the patient and health care providers, duration and number of medications needed, side effects, cost of treatment, competing demands on time, contradictory norms or expectations of families and cultural groups, and the poor quality of the TB control infrastructure.

The present study was conducted to determine the rate of adherence to antituberculosis drugs among compliance of TB patients in Alexandria, and to study some epidemiological factors associated with it.

All patients prescribed antituberculosis therapy during January-March 1995 were identified from records kept in the six chest dispensaries of Alexandria

(El-Maamora, Bacous, Moharrem Bey, El-Gomrok, Al-Kabbary and Kom-El-Shokafa). Addresses of these patients were obtained from their records.

And its completely deference with Afghanistan and In Alexandria, all smear-positive cases are hospitalized until they become smear-negative. During hospitalization, they receive rifampicin 600 mg, isoniazid 300 mg, pyrazinamide 30 mg/kg per day and streptomycin 15 mg/kg per day. On discharge, they receive ethambutol 40 mg/kg three times weekly and isoniazid 300 mg daily for 8 months. Smear-negative cases and those who refuse hospitalization receive ethambutol and isoniazid for 12 months with streptomycin for the first 2 months.

The research team visited these patients at home during July and August 1995, a predesigned questionnaire was completed using a patient self-report method. The questionnaire was composed of the following sections: a) demographic characteristics of the patient, e.g. age, sex, work and education; b) symptoms and diagnosis of tuberculosis and knowledge of the course of tuberculosis, modes of transmission, and its complications; and c) adherence, where the patient was asked about drugs taken, how taken, number of tablets (dose), regularity, side effects and improvement in symptoms of TB. The patients were considered noncompliant if they did not take the medication as prescribed by the treating physician.

Analysis was carried out using SPSS statistical software. Crude odds ratio was computed to test the bivariate association for binary variables. Multivariate logistic regression was performed to obtain the adjusted estimates of the effect on compliance of all variables found significantly associated in bivariate analysis. The number of newly diagnosed TB cases recorded at the six dispensaries during the study period was 184. Addresses of five patients could not be found, seven patients were lost due to lack of cooperation or travelling and 172 were interviewed.

About two-thirds of males (64.5%) and females (66.7%) complied with their antituberculosis regimens, giving an overall compliance rate of 65.1%. As regards age distribution, 20 patients (11.63%) were under the age of 20 years. More than three-fifths of the sample were above 20, but less than 50 years of age. Chi-squared distribution showed no association between age of the patient and

compliance ($c^2 = 7.78$; $P > 0.05$). With regard to the work of the patients, 44 (25.6%) were manual workers, 36 (20.9%) were skilled workers, while 45 females out of 48 were housewives. Again, work was not found to be statistically associated with compliance ($c^2 = 6.01$; $P > 0.05$).

More than half of the patients were either illiterate or could just read and write. Graduates from secondary schools or university constituted only 18.6% of the sample. Education was not found to be statistically associated with compliance ($c^2 = 4.65$, $P > 0.05$). Crude analysis of the variables studied with compliance to antituberculosis drug regimens. As regards the presenting symptoms of TB, patients with cough and night sweating were more likely to comply with treatment (odds ratio [OR] = 3.27 and 3.03 respectively). Those who presented with anorexia were less likely to comply (OR = 0.61). Presence of other associated diseases, e.g. diabetes, decreased compliance (OR = 0.63; $P > 0.05$). Patients hospitalized at the start of treatment, patients who received instructions about the use and importance of the drugs from drug providers, patients with good knowledge about TB, and patients who reported a positive family history of TB were found to have been more compliant.

All factors found to be significantly associated with compliance in the crude analysis were subjected to multivariate logistic regression. Knowledge about TB, hospitalization, family history, and cough as a presenting symptom were all associated with increased compliance (OR = 8.87, 4.85, 3.19 and 2.44 respectively) while the presence of other associated diseases decreased compliance (OR = 0.2).

In developing countries, compliance with antituberculosis chemotherapy poses specific problems because of the epidemiological and socioeconomic context in which it occurs. Physicians cannot accurately identify noncompliant patients, and it has been reported that patients commonly conceal this behaviour from their physician. Therefore, members of the study team had to collect the data themselves.

The present study shows that 65.1% of the sample studied of TB patients was compliant with the prescribed regimen. About one-third of the patients were noncompliant, which may result in treatment failure. This figure is in line with

that reported by Mousa et al. who found that 41% of smear-positive TB patients in Alexandria in 1993 were noncompliant. In China, TB treatment was completed by 73.1% of patients within 9 months, while 26.9% failed to complete their regimen. Studies on the association of demographic characteristics of patients with adherence to antituberculosis medication give inconsistent results. The present work revealed that these factors (age, sex, work and education) were not associated significantly with adherence. The relationship between family income and adherence could not be investigated as most patients concealed their income. The present study reveals that compliance with antituberculosis therapy was significantly higher among those who had good knowledge about TB (OR = 8.57). It has also been documented that when patients know about the natural history of TB, its complications and the importance of complying with drug therapy, their adherence to the prescribed regimen is improved. In a similar study in India in 1992, the authors found that there was an association between the compliance behaviour of patients and their knowledge of specific aspects of the disease. Patients who perceive their illness to be more serious and who believe that treatment will alleviate the condition are more likely to be compliant. Features of the disease are potential determinants of compliance. Patients with active disease and those with symptoms are more compliant. The present study revealed that patients who experienced more cough, haemoptysis and sweating generally complied more to the treatment (OR = 3.72, 2.01, 3.03 respectively). These patients may have been more convinced of severity of their disease. However, on controlling other variables studied, which may act as confounders or effect modifiers, only cough remained as a predictor (OR = 2.446). Generally, patients with symptoms usually recognize the severity of TB and have a higher chance of compliance. Tuberculosis patients with other associated chronic diseases, e.g. diabetes or ischaemic heart disease, who receive other drugs on a daily basis, were less likely to comply with antituberculosis treatment. This may be attributed to the complexity of compliance with too many drugs, especially for less-educated people, in addition to the increased cost. In contrast to the present findings, Wong reported that associated diseases did not contribute to noncompliance in his study and also a study done in the zambi and lausaka about the knowledge and attitude

to the compliance of tuberculosis treatment, they shown that > 1.5 million TB cases occur in sub sahara Africa each year and the lack of compliance to the treatment of tuberculosis and the prevalence of tuberculosis was 511 per 100,000 population in year 2000 they estimated and 70-80% of the TB patients were co infected with HIV and a descriptive study conducted on a sample of 104 pulmonary TB patients which were receiving health care at the chest clinic of the a tertiary hospital. and the objective of this study was to determine the attitude, knowledge and influencing the compliance of tuberculosis. for that to understand the trend of the prevalence of the TB compliance with the treatment of tuberculosis and non compliance with the treatment of tuberculosis they found that the :

“compliance of the TB was a great determinant of the TB control that’s why every one of the patients were telling there compliance the staff done measures to provide good services” (<http://www.ncbi.nlm.nih.gov/mesh?itool=sidebar>) and also another study on compliance of tuberculosis treatment done due to defaulting treatment were a lot in 2007 about the poor compliance (not good compliance) and defaulting treatment of TB patients contributed to increase multi drug resistant (MDRTB) and then they tried for to modify about what is non compliance, failure or refusal to confirm to follow rule and regulations or a behavior of the persons that caregiver with a health promoting and therapeutic plans that’s why they define non compliance because of poor compliance they had many patients default and resistant of anti tuberculosis drugs and day by day and year by year mortality were increased that is why all about compliance of treatment of tuberculosis after that they found the non compliance then they understood about the attitude of the patients and then they announced needed community health workers to involve the community about the this disease to change the behavior of the people.

2.3 Predicting whether patients are compliant

As I mentioned about the compliance in Afghanistan is one of the main reason is insecurity and a study by shown in (1981, 1989) and developed the cognitive hypothesis model of compliance. This claimed that compliance can be

predicted by a combination of patient satisfaction with the process of the consultation, understanding of the information given and recall of this information. Several studies have been done to examine each element of the cognitive hypothesis model. This model is illustrated in Figure below you can see it as

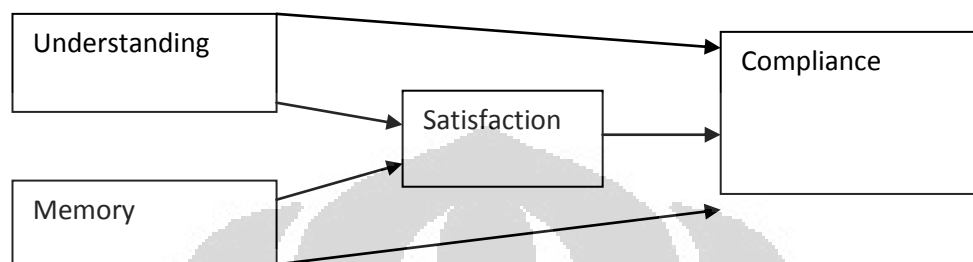


Figure 2.4 Leys model of the compliance

2.4. How can compliance be improved?

Compliance is considered to be essential to patient well-being. Therefore studies have been carried out to examine which factors can be used in order to improve compliance. such as

1. The role of knowledge in health professional–patient communication
2. Problems with the traditional approach to health professional–patient communication
3. The problem of doctor variability
4. Explaining variability – the role of health professionals’ health belief
5. Communicating beliefs to patients
6. Explaining variability – an interaction between health
7. Professional and patient
8. Agreement between health professional and patient

2.5. The role of the media for improving good compliance of TB patients

In Afghanistan still in rural area the people do not have access to the media even to the radio they cannot buy a radio and television due to poor and low economic condition so the most commonly held belief in both the lay and academic communities is probably that body dissatisfaction is a response to representations of thin women in the media. Magazines, newspapers, television, films and even novels predominantly use images of thin women. These women may be advertising body size-related items, such as food and clothes, or neutral items, such as vacuum cleaners and wallpaper, but they are always thin. Alternatively they may be characters in a story or simply passers-by who illustrate the real world, but this real world is always represented by thinness. Whatever their role and wherever their existence, women used by the media are generally thin and we are therefore led to believe that thinness is not only the desired norm but also the actual norm. On those rare occasions when a fatter woman appears, she is usually there making a statement about being fat (fat comedians make jokes about chocolate cake and fat actresses are either evil or unhappy), not simply as a normal woman. Do these representations then make women dissatisfied with their bodies? Some research suggests that this is the case. For example, Ogden and Mundari (1996) asked men and women to rate their body dissatisfaction both before and after studying pictures of either fat or thin men or women (the pictures were matched in gender to the participant). The results showed that all participants, regardless of sex, felt more body satisfied after studying the fatter pictures and more body dissatisfied after studying the thinner pictures. It was also shown that this response was greater in the women than the men. Similar results have been found for anorexics, bulimics and pregnant women (Waller et al. 1992; Hamilton and Waller 1993; Sumner et al. 1993).

If such changes in body dissatisfaction can occur after only acute exposure to these images, then it is possible that longer-term exposure might be more serious. However, is the media the only explanation of body dissatisfaction? Are women (and sometimes men) simply passive victims of the whims of the media? Perhaps body dissatisfaction also comes from a range of additional sources.

2.6 Ethnicity

Although body dissatisfaction has predominantly been seen as a problem for white women, the literature examining the relationship between body dissatisfaction and ethnic group is contradictory. For example, higher rates of a range of behaviors associated with body dissatisfaction have been found in white women when compared with black and/or Asian women in terms of bulimic behaviors (Gray et al. 1987), generalized disordered eating (Abrams et al. 1992; Akan and Grilo 1995) and body dissatisfaction and eating concerns (Rucker and Cash 1992; Powell and Khan 1995). However, in direct contrast, other studies report the reverse relationship between ethnicity and weight concern. For example, Mumford et al. (1991) reported results from a school in the north of England that indicated that the prevalence of bulimia nervosa was higher among Asian schoolgirls than their white counterparts. In parallel, Striegel-Moore et al. (1995) reported higher levels of drive for thinness in black girls, and Hill and Bhatti (1995) reported higher levels of dietary restraint in 9-year-old Asian girls when both these samples were compared with white girls. Furthermore, additional studies have suggested that equally high levels of weight concern can be found in women and girls regardless of their ethnicity (Dolan et al. 1990; Ahmed et al. 1994).

Therefore some research indicates that whites are more body dissatisfied than Asians and blacks, other research shows that whites are less dissatisfied and some research even shows that there is no difference by ethnic group.

1. Perception

Majority of the people do not understand the basic or the nature of the disease in the community where they live, for e.g a positive TB patients live in a house eating and drink and doing all together and if the doctors guide them to live separate they never believe and not accept in my experiences when I was working in Hospital and in TB center as a doctor I advised the patients to be separate those who are positive and the patients wrong believe that and never want to separate their father or mother and they think if they did that they make a big sin, and that is why psychologically they are doing wrong percept and conceptions because of

not educated no one aware them about the disease and spreading of the disease to know that problem to avoid the spreading in the community.

I want to refer to the interpretation of what we take in through our senses (allpsych.com/ psychology). The conscious mental registration of a sensory stimulus perceptive (medical dictionary). In social psychology, the term perception refers to the different mental processes that we use to form impression of other people (psychology.about.com)

a. Gestalt psychology

It is involved in all our interactions with the world surrounding us, implying the recognition of environmental stimuli as well as our response (www.gestalt.psychology/net). It is mental organization and interpretation of sensory information (encyclopedia, the free dictionary.com). How we perceive objects in our environment through the perceptual process (psychology.allabout.com)

b. Cognition perception

How people perceive, think, and act

c. Visual perception theory

In order to receive information from the environment we are equipped with some organ e.g: eye, ear, nose. Each sense organ is part of a sensory system.

2. Attitude

What is attitude?

The position or posture assumed by the body connection with an action, feeling, mood, etc. A state of mind or a feeling disposition had a positive attitude about work. Manner, disposition, feeling, position, etc, with regard to a person or things. (en.wikipedia.org/wiki/attitude)

3. Belief?

What is belief?

The mental act, condition, or habit of placing trust or confidence in another: My belief in you is as strong as ever. Mental acceptance of and conviction in the truth. (American. heritage ® dictionary)

Creativity is a state of mind it's time to energize the pattern for belief is simply a thought you keep thinking change your pattern result everything is new and exciting.

4. Stigma

What is stigma?

A mark or token of infamy, disgrace or reproach "Party affiliation has never been more casual. The stigmata of decay are everywhere (American.heritager /dictionary what c caused the stigma of men cheating on their wives with other men?

Stigma refers to severe social disapproval of personal characteristics or beliefs that are against cultural norms. Social stigma often leads to marginalization (psychology.wikia.com). Mental illness is a condition that affects a person's mood, thoughts and behaviors (Refers to the prejudice and discrimination directed at people living with HIV/AIDS and the groups and communities that they are associated with. Mental health. Recognize and cope with the stigma of mental illness

5. Depression

What is depression?

The act of depressing. The condition of being depressed. An area that is sunk below its surroundings; a hollow. The condition of feeling sad or despondent. A psychiatric disorder (American heritage Dictionary)

Depression symptoms, causes, and treatments, with information on getting help and coping (Depression – comprehensive overview covers symptoms treatment and coping with this mood disorder. Medication side effects, causes and diagnosis. (www.mayoclinic.com)

CHAPTER 3 CONCEPTUAL FRAMEWORK

3.1. Conceptual Frame Work

In general, a framework is a real or conceptual structure intended to serve as a support or guide for the building of something that expands the structure into something useful.

In this study the key outcome variable are bellow in the theoretical and conceptual frame works the variable will be analyzed positive there is associan or not associan with compliance of tuberculosis specifically those three kinds of factors mentioned above (socio economic, socidemographic, psychological factors) which each of them mentioned and defined in the above previous pages. and there I have selected three theoretical frame works which are the factors have rule in the influencing of the compliance and then I selected one conceptual frame work which mainly influencing the compliance of tuberculosis in Afghanistan and these are described in next bellow pages.

3.3. Theoretical framework (figure)

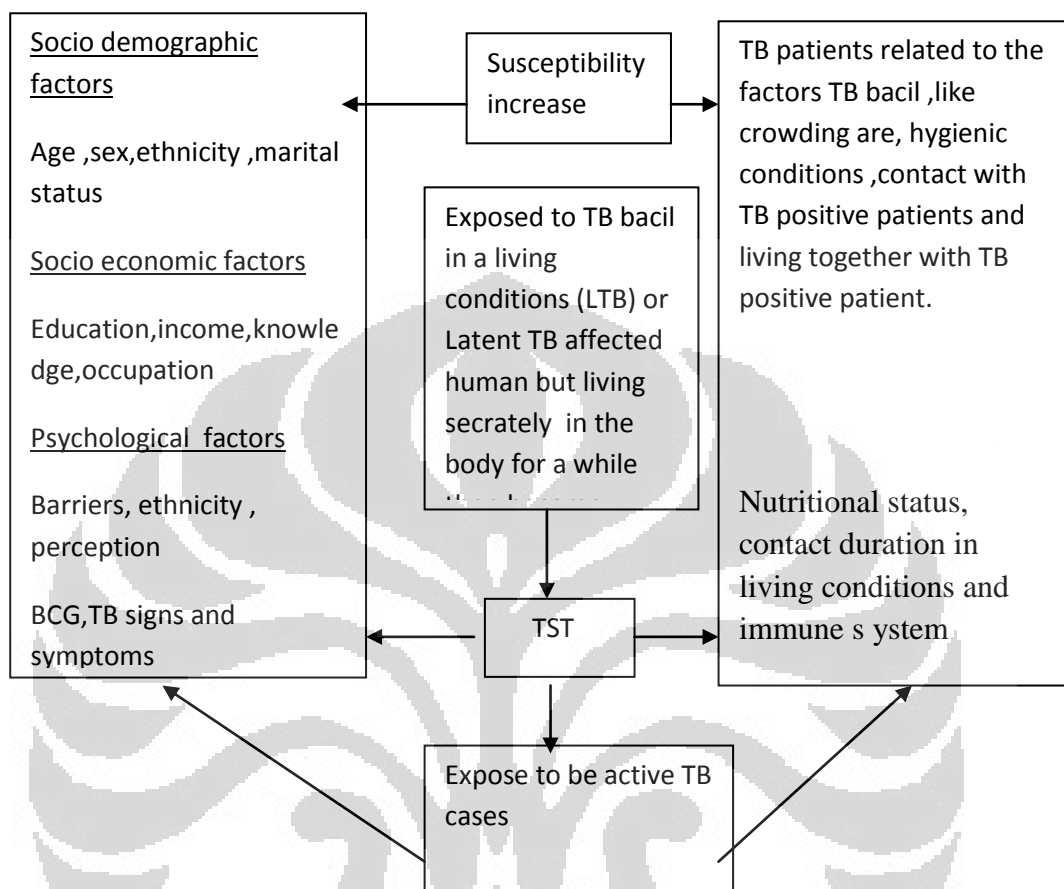


Figure 3.3. particular frame word for TST positivity (WHO)

3.4.Theoretical Frame Work (figure)

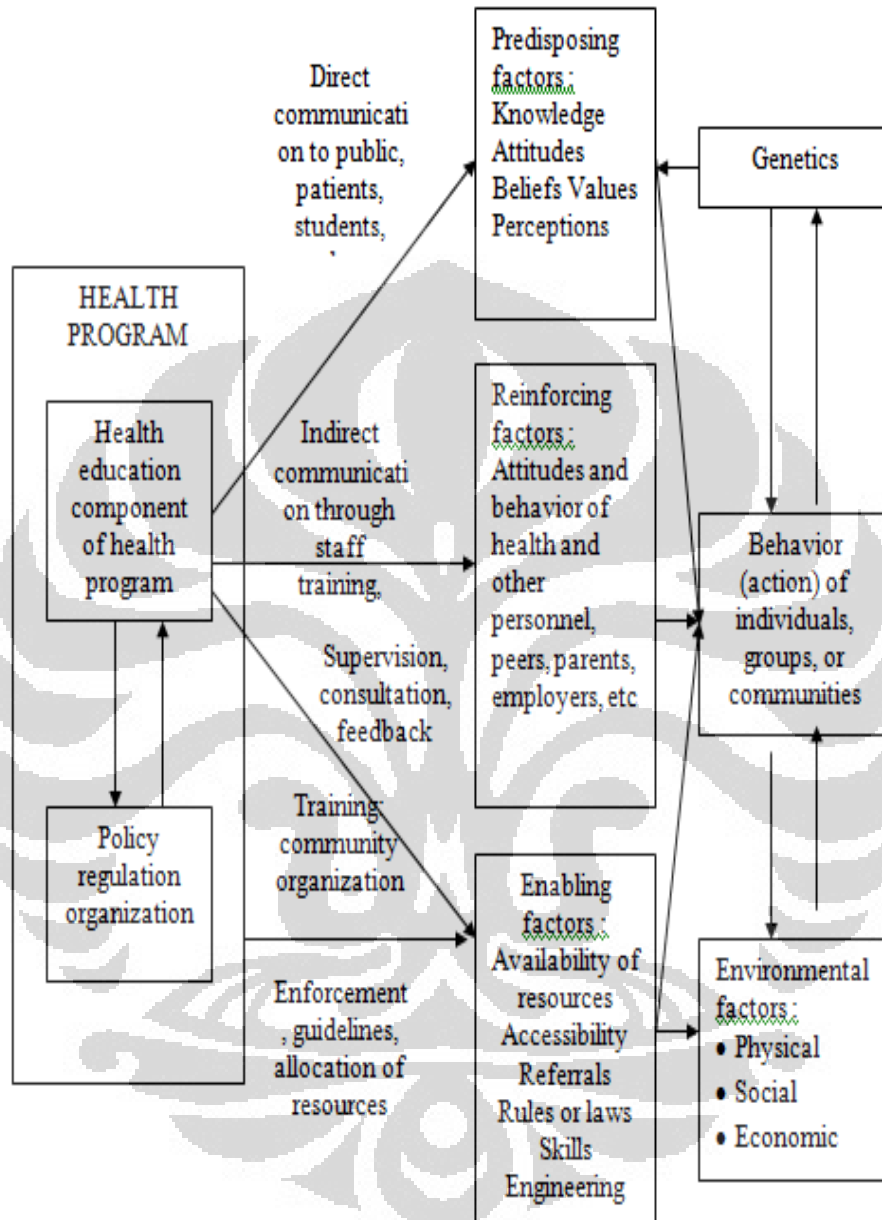
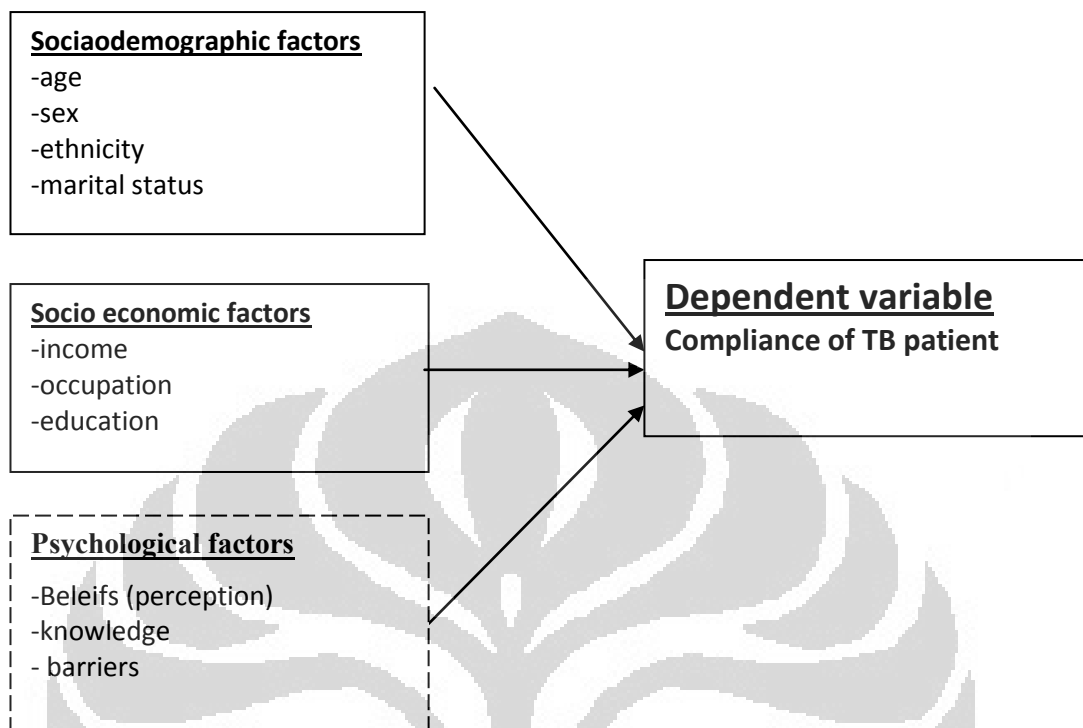


Figure: Precede Framework

Source: Green & Kreuter, Health Program Planning 4th ed (2005)

3.5. Conceptual frame work (figure)



3.5.1. Putative Risk Factors

Description of the independent variables as putative risk factors in which the data will be collected in this study.

Age: age is important factor because of old ages are susceptible a lot to have MDR-TB comparing to low age properly in those area which are living positive TB patients for e.g in army, in university, in airport, in bus and train stations age in years is continuous variable and minimum age level for study groups will be considered 14years to 16 years and this risk factor in various surveys for TB,

6. Sex approximately 6 million children, of whom some 35% are girls.

Sex is also a factor for TB infection as estimated 65% in a TB population are female in Afghanistan which has TB.

7. Ethnicity

In Afghanistan there is Pashtoon, Tajik, Uzbek, Hazara, Turkmen, Aimaq, Baluch, Nuristani, and Kizilbash. Which considered as categorical variable in conceptual frame work and minorities of the people are ubzbak and

hazara which are supposed to be more at risk to develop TB infection than others.

8. Education

Literacy (2008 est.)--28.1% (male 43%, female 12%), but real figures may be lower given breakdown of education system and flight of educated Afghans during 3 decades of war and instability. but in this study the education will be categorical variable and will be group into literacy, informal, primary, high school and university.

9. Socio economical factors

Low economy of the people in Afghanistan is a major determining of TB infections and other diseases. in my own experience majority of the TB patients are poor and have low economic and living in a poor and non hygienic conditions, from one side living area is poor and low hygienic and from other side they do not have perfect nutritional feeding to have high immune system, and that is one of the main reason of TB in the country too, they have higher prevalence of the infections and so low monthly income they have such as disables and or those who are living on the border in tents also the NOMADES and income measures as a continuous variable (Afghani).

3.6. Operational definitions

An operational definition, when applied to data collection, is a clear, concise detailed definition of a measure. The need for operational definitions is fundamental when collecting all types of data. It is particularly important when a decision is being made about whether something is correct or incorrect, or when a visual check is being made where there is room for confusion.

3.6.1. Compliance (dependent variable)

1. This dependent variable is divided into two kinds
 - a. Good compliance: those patients which they were satisfy to their diagnosed diseases and treatment, of their diseases.

not good compliance: those patients which they were not satisfy to their diagnosed diseases treatment due to any cause that he /she not took medicines, the important point is satisfaction of the TB patients as define: “Patient satisfaction with ambulatory care is important for many people, but it is especially important for patients undergoing treatment for tuberculosis (TB) because they must persist with a long and difficult therapeutic regimen. TB treatment typically requires 3 to 8 medications given daily or several times a week for 6 to 18 months.⁵ Two basic conditions are necessary for successful therapy: the regimen must contain multiple drugs to which the organism is susceptible, and ingestion of the drugs must continue until become cured “.

b.

2. Income

a. High income: those patients which had >1 US \$ per day

b. Low income: those patients which had <1 US \$ per day

3. Ethnicity:

Majority of the population (65%) in Afghanistan are Pashtoon and second are , Hazara, Tajik, Uzbek, in interview asked the patients about ethnicity

4. **Knowledge:** those patients who known and understood about tuberculosis and its risks those were good knowledge and those who did not understand about TB those were not good knowledge for example according to the questionnaire asked, do you know what is tuberculosis?

5. **Education** those patients who could read and write well educated (different level), and those who could not read and write those were illiterate

6. **Belief:** those patients had interest and followed doctors advice those had belief and those who had not followed doctors advices those had not beliefs.

7. **Occupation:** those patients who had high level education those had job.

8. **Marital status:** those patients who were female and more than 16 years old those were married and those patient who were male and more than 25 years old those were married.

3.7. Operational Definition of Variables

Resume the variables which measured in this study, their operation definitions, method of measurement and scales

Table 3.1 OPERATIONAL DEFINITIONS				
No	variables	operational definition	method and measurement	scale of the measurement
	compliance		interviewing patients by questionnaire	1=good compliance 0=not good compliance
.Socio demographic factors				
1	Age	Age of the TB patients during interview	interviewing patients by questionnaire	<20 years child 20-50 years adult >50 years, older
2	sex	sex of TB patient	interviewing patients by questionnaire	male=1 female=2
3	ethnicity	ethnicity of the patients asked in interview	interviewing patients by questionnaire	1=pashton,2=tajik,3=hazara,4=uzbak,5=others
Socio Economic factors				
4	Education	education level of the TB patients(lowest ,highest,primary)	Interviewed patients by questionnaire	Categorical 0=illiterate 1=prima 2=high 3=univers
5	Income	monthly income of the TB patients	interviewing patients by questionnaire	1=high , 0= low
6	knowledge	patients awareness about TB	interviewing patients by questionnaire	1=good, = not good
7	occupation	asked job of the TB patients during interview	interviewing patients by questionnaire	1=yes, 2= no
8	Belief	asked about the perception of the patients about TB disease	interviewing patients by questionnaire	1=yes, 2=no
9	marital status	masked the marital interm married or single	interviewing patients by questionnaire	1=married , 0= single

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Materials and Methods

4.1.1 Study Design

A descriptive study conducted in cooperation with public health directorate Kandahar, WHO, in western Kandahar province regional TB treatment center Afghanistan well structured questionnaire used and we had separate register for the patients participated in this study.

4.1.2. Study population and area

The Study conducted in Kandahar regional province in regional TB diagnosis and treatment center Afghanistan at the time of the study there were totally 243 TB confirm patients, 79 patients selected and participated from the total population and interviewed by a structured questionnaire in 2009.

4.1.3 Sampling technique and selection criteria

4.1.3.1 Inclusion and Exclusion Criteria

In this descriptive study all male and female participated from age 14 years old and above 14 years old ages are studied with irrespective of their BCG and their behavior and living conditions such as income and occupation. Marital status and economic condition and behavioral conditions And patients were living in 6 province (Kandahar, Helmand, Zabul, Uruzgan, Nimroz, Farah) and diagnosed only TB positive patients.

4.2. Analysis the risk factors associated with compliance of TB patients among the TB patients in Kandahar province Afghanistan

The data which I studied and collected by descriptive study, done in 2009 to identify and describe the factors associated with compliance of TB patients in Kandahar regional TB treatment center Afghanistan.

4.2.1 Study design

The setting of the study was conducted Descriptive study in June,july,august,2009 to identify the factors which influence TB compliance among the TB patients and non compliance of TB (default,relapse,failure and resistant) in western regional site Kandahar Afghanistan. by further analyzing the primary data which I collected from face to face interview in the TB hospital and focused more specific to determine the variables as associated with the compliance of the TB patients take medicines and I did interview only once each with each selected patient by a prepared and structured questionnaire.

4.2.2 Study population and area

4.2.3. Descriptive study

I selected from TB confirm register from 243 cases only 79 TB patients for the interview and i could not select more of that because of limited budgets, as and these 79 patients are randomly selected from the confirm TB registers which are the residence of six provinces related to Kandahar region such as zabul province, Nimroz province, Helmand province, uruzgan province, farah province and Kandahar regional province

4.2.3.1 Statistics design

According to my hypothesis and scale of measurement of the variables I wanted to use independent T TEST and CHI SQUARE for bivariate analysis and for showing the significance of the selected variables with compliance of TB.

4.2.3.2 Sample size

In this design study which is done cross sectional and provided hypothesis selected testing hypothesis or power analysis to prevent error for a population proportion formula used as

$$n = \frac{\left\{ z_{1-\alpha/2} \sqrt{P_o (1 - P_o)} + z_{1-\beta} \sqrt{P_a (1 - P_a)} \right\}^2}{(P_a - P_o)^2}$$

and appropriate sample size calculation for

This study was testing hypothesis, and the Level of significance =5%, power of the test =80% test value of the population proportion (max) =50% and

the anticipated value of the population proportion = 65.6% and sample size = 79 TB patients in this region.

Bellow testing hypothesis is shown which the power of test is 66%

Alfa	5%	5%	5%	5%
power of test	90%	80%	80%	80%
p0	50%	50%	50%	50%
Pa	55%	55%	60%	65,6%
N	1047	783	194	79

1.3b. Hypothesis tests for a population proportion (two-sided test)

Please select the desired unknown:

- Level of significance (%)
- Power of the test (%)
- Test value of the population proportion
- Anticipated value of the population proportion
- Sample size

Please enter the remaining values:

α 5

$1 - \beta$ 66

P_0 0.875

P_a 0.7826

n 79

$$n = \frac{\left\{ z_{1-\alpha/2} \sqrt{P_0 (1 - P_0)} + z_{1-\beta} \sqrt{P_a (1 - P_a)} \right\}^2}{(P_a - P_0)^2}$$

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4.2.3.3 Procedures

At the first of the study of all variables about which the data collected were done from total 15 variables, 10 variables selected for further analysis to evaluate and assess the factors associated with outcome variables that is good compliance or not good compliance.

Selection and condensation of the data done based on the literature review and situation analysis the variables those were selected are age, sex, income, occupation, marital status, ethnicity, education level, beliefs, knowledge, compliance.

CHAPTER 5

RESULT

5.1 Descriptive Analysis

This part of the Study analysis showing the frequency, (%)percentage of distribution, mean, median, standard deviation, min and max of individual inmate related characteristics such as compliance, age, sex, ethnicity, level of education, monthly income, knowledge, barriers, marital status, beliefs, for the studied population under the research which are 79 persons participated in this study all were calculated and the continues variable and independent variables are classified into deferent groups for analysis and the proportion and frequency for categorical variables are calculated.

Table 5.2 Description Of ages of the total sample

Variable (numerical)	N	Mean	Median	SD	Minimum	Maximum
age (years)	79	37	36	15	14	67

5.2 Statistical Analysis

In the first stage descriptive analysis and then bivariate analysis (chi square test) was performed in which the association of each independent variable with the outcome variable (good compliance or not good compliance of TB patient) were analyzed, OR and 95%CI for OR calculated by using this method of analysis and showing statistical significance in bivariate analysis.

5.2.1 Sociodemographic Factors

5.2.2 Compliance of TB patients

The compliance of TB patients is grouped into two groups such as good compliance and not good compliance as in bellow table shows that totally 79 TB patients studied which 46(58.23) have not good compliance and 33(41.77%) have good compliance of their taking medicines during their treatment regime.

1. Age

is I classified into three groups such as (<20years,20-50 years, >50years olds) therefore The mean age of the compliance of TB patients in this study is 37(+_14years) and there was 15(18.99%) in age group of 20 years old and 46(58.23%) in the age group of 20- 50 years old and 18(22.78%) in age group of over 50 years.

2. Marital status (married, single)

As we see above the marital status of the TB patients devided into two groups as married and single groups, From total 79 participants 68(86.08%) were married and 33(41.77%) were single as in the bellow table shown that.

2. Sex (male, female)

3. From total 79 TB patients were participated in this study 47(59.49%) of them were male and 32(40.51%) of them were female.

From total 79 TB patients interviewed.

4. **Ethnicity** s participants 50 (63.29%) of them were pashtoon and 29(36.71%) of them were others. This bellow table is the frequency distribution of the compliance of TB patients, demographic factors.

Table 5.3 Frequency Distribution of The Compliance of Tb Patients

Variables	Frequency	Percentage (%)
Compliance		
Not Good	46	58.23
Good	33	41.77
Age (years)		
-20 years old	15	18.99
-20-50 years old	46	58.23
-> 50 years old	18	22.78
Marital status		
Married	68	86.08
Single	11	13.92
Sex		
-male	47	59.49
-female	32	40.51
Ethnicity		
-pashtoon	50	63.29
-others	29	36.71

5.2.3 Socio economic factors of the TB compliance

1. Educational level of TB patient's

From total 79 TB patients participated in this study , 9(11.39%) of them were illiterate, 33(41.77%)of them primary school educated , 32(40.51%) of them were high school educated and 5(6.33%) of them were university graduated patients.

2. Income of TB patients

From total 79 patients 39(49.37%) were low income monthly, and 40(50.63%) were high income. that's why even illiterate are having jobs as guard, cleaner, or door keeper in NGOs and still in Afghanistan thousands NGOs national and international working there because of after Taliban's régime collapsed in year 2000 all the NGOs permitted to work in different parts in Afghanistan as it needed.

3. Occupation of TB patients

From 79 person 29(36.71%) were jobless and 50(63.29%) were having jobs in different parts as with government employer, NGOs employers, soldiers. etc

Frequency distribution of TB compliance takes medicines, socio demographic factors

Table 5.4 Frequency Distribution of The Compliance of Tb Patients

Variables	Frequency	Percentage (%)
Educational level		
-illiterate	9	11.39
-primary	33	41.77
-high school	32	40.51
-university	5	6.33
Income (monthly)		
Low	39	49.37
High	40	50.63
Occupation		
No	29	36.71
Yes	50	63.29

5.2.4 Psychological factors of TB patient's compliance

1. Knowledge of TB patients compliance

Total studied 79 persons which 41(53.25%) had not good knowledge about TB diseases. And 36(46.75%) had good knowledge about TB diseases.

2. Barriers of the TB patient's compliance

From total 79 persons interviewed 44(55.70%) had security barriers when they came to hospital as bombing, road bomb blasting and face to face war on the street, and 35(44.30%) were others

3. Belief of TB patients compliance

From total 79 persons TB affected interviewed and 39(49.37%) had not belief to their diagnosis and medical staff and 40(50.63%) had belief to their diagnosis and medical staff. Frequency distribution of TB compliance takes medicines, psychological factors.

Table 5.5 Frequency Distribution of psychological factors

Variables	Frequency	Percentage (%)
Knowledge		
Not good	41	53.25
Good	36	46.75
Barriers		
Security	44	55.70
Others	35	44.30
Belief		
No	39	49.37
Yes	40	50.63

5.3 Bivariate Analysis

5.3.1 Socio demographic factors analysis

Table 5.6 Frequency Distribution of Sex Compliance

Sex	Compliance					p*	OR	95% OR	
	Good		not good		Total				
	n	%	n	%	N				
Female	14	43.75	18	56.25	33	0.769	1.15	0.46	2.85
Male	19	40.43	28	59.57	47		-	-	-

As we see the above table (table A1) according to statistic result female TB patients have good compliance 1.15 times (0.46%-2.85%) higher than male TB patients.

Table 5.7 Frequency Distribution of Age Compliance

Age	Compliance				p*
	Good		not good		
	N	n	n	%	
N	33		46		0.736
Min	15		14		
Max	64		67		
Median	33.00		39.00		
Mean	36.52		37.70		
SD	14.94		15.50		

As above table (table A1.2) descriptive analysis 33 TB patients have good compliance during their treatment and statistic result showing there is no significance (P=0.736) between male and female.

Table 5.8 Frequency Distribution of Educational Level Compliance

Education level	Compliance					p*	OR	95% OR	
	Good		not good		Total				
	N	%	n	%	n				
University	4	80.00	1	20	5	0.339	8.00	0.60	106.936
High school	13	40.36	19	59.38	32		1.37	0.29	6.48
Primary	13	39.39	20	60.61	33		1.30	0.75	6.136
Illiterate	3	33.33	6	66.67	9		1.0		

according to the above table A1.3, four TB patients with high level education have good compliance 8 (0.60-106.936%) times higher than high school, primary school educated and illiterate patients, 13 TB patients graduated from high school have good compliance 1.37 (0.75-6.48) times higher than primary school graduated and illiterate patients, 13 TB patients primary school graduated and have good compliance 1.30 times(0.75-6.136) higher than illiterate TB patients.

Table 5.9 Frequency Distribution of Income Level Compliance

Income level	Compliance					p*	OR	95% OR	
	Good		not good		Total				
	N	%	n	%	N				
High	15	37.50	25	62.50	40	0.436	0.70	0.29	1.72
Low	18	46.15	21	53.85	39				

As shown in above table A1.4 according to statistics result 15 TB patients with high level income have good compliance 0.70 (0.29-1.72) times lower (less) than those patients with low level income.

Table 5.10 Frequency Distribution Of Occupation Compliance

Occupation	Compliance					p*	OR	95% OR	
	good		not good		Total				
	n	%	n	%	n				
Yes	23	46.00	27	54.00	50	0.317	1.62	0.63	4.17
No	10	40.43	19	65.52	29		-	-	-

From the above table A1.5 showing that 23 TB patients with occupations have good compliance 1.62(0.63-4.17) times higher than those patients which have not occupation

Table 5.11 frequency distribution of knowledge compliance

Knowledge	Compliance					p*	OR	95% OR	
	Good		not good		Total				
	N	%	n	%	n				
Good	16	4.44	20	55.56	36	0.792	1.13	0.46	2.79
Not good	17	41.46	24	58.54	41		-	-	-

Above table A1.6 shows that 16 TB patients with good knowledge have good compliance 1.13(0.46-2.79) times higher than those patients which have not good knowledge.

Table 5.12 frequency distribution of sex compliance

Sex	Compliance					p*	OR	95% OR	
	Good		not good		Total				
	N	%	n	%	N				
female	14	43.75	18	56.25	33	0.769	1.15	0.46	2.85
male	19	40.43	28	59.57	47		-	-	-

According to the table above (tab A1.7) 14 TB patients female are have good compliance 1.15 (0.46-2.85) times higher than male patients.

Table 5.13 Frequency Distribution Of Beliefs Compliance

Belief	Compliance					p*	OR	95% OR	
	Good		not good		Total				
	N	%	n	%	N				
Yes	17	42.50	23	57.50	40	0.894	1.06	0.43	2.60
No	16	41.03	23	58.97	39				

According to the table above (tab A1.7) 14 TB patients female are have good compliance 1.15 (0.46-2.85) times higher than male patients.

Table 5.14 Frequency Distribution Of Beliefs Compliance

Belief	Compliance					p*	OR	95% OR	
	Good		not good		Total				
	n	%	N	%	n				
Yes	17	42.50	23	57.50	40	0.894	1.06	0.43	2.60
No	16	41.03	23	58.97	39				

Table A1.8 showing that 17 TB patients with have belief have good compliance 1.06(0.43-2.60) times higher than those patients which no beliefs.

Table 5.15 Frequency Distribution Of Barriers Compliance

Barriers	Compliance					p*	OR	95% OR	
	Good		not good		Total				
	N	%	n	%	N				
Security	20	45.45	24	54.55	44	0.457	1.41	0.57	3.49
Others	13	37.14	22	62.86	35				

As in above table A1.9 those TB patients with security barriers have good compliance 1.41(0.57%-3.49%) times higher than others.

Table 5.16 Frequency Distribution Of Ethnicity Compliance

ethnic	Compliance					p*	OR	95% OR	
	Good		not good		Total				
	N	%	n	%	N				
Pashtoon	20	40.00	30	60.00	50	0.675	0.821	0.33	2.07
Others	13	44.83	16	55.17	29		-	-	-

according to the table A1.10 TB patients which are pashtoon have good compliance 0.821(0.33-2.07) times lower than comparing to others.

Table 5.17 Frequency Distribution Of Marital Status Compliance

Marital status	Compliance					p*	OR	95% OR	
	Goodfre		not good		Total				
	N	%	n	%	N				
Married	30	44.12	38	55.88	68	0.293	2.11	0.51	8.63
single	3	27.27	8	72.73	11		-	-	-

Above table A1.11 as we see there are 30 TB patients married have good compliance 2.11 (0.51-8.63) times higher compare to the patients which are singles.

CHAPTER 6

DISCUSSION

6.1 Good Compliance and non good compliance of TB treatments

In this study, compliance occurs when the patient takes TB treatments without interruption for more than two months and completes the course. Non-compliance occurs when a patient interrupts treatment for more than two months. Compliance to TB treatment is one of the most important factors that determine the outcome of treatment (good, or not good).

Compliance of the tuberculosis is universally recognized as crucial setting for the prevention and control of Multi Drug Resistant (MDR TB) tuberculosis infection, relapse TB, default and failure tuberculosis. A study conducted in Colombo showed treatment compliance was negatively affected by disease-related problems such as inability of the staff to manage medicine side effects and patients' perception of equating feeling well or better with being cured (Janakan & Seneviratne 2008:214-23). The study suggests that delays in addressing medicines' adverse effects or ignoring patients' complaints about adverse effects of medicines they are taking may thus promote non-compliance to treatment (Janakan et al 2008:222). A Thailand study also demonstrated an association of poor compliance to TB treatment and adverse medicinal effects (Okanurak et al 2008:1160). and same problems exist in neighbors Iran and Pakistan too, in Afghanistan since 3decades of war and conflict the real and inaccessibility of the exhaustive data about the health problems and challenges are still confusable and questionable that's why, not done any clear survey or study to collect a real and trustable data to be acceptable or even not done any survey yet for example like compliance of tuberculosis patients take anti TB medicines, still there are the cases of MDR, relapse and default in addition the activities of tuberculosis are still going on well but clearly not identified the influenced factors of the TB compliances, and there is no any prevalence to know still the compliance of tuberculosis, that do the patients have good compliance or poor compliances not cleared, that's why since 3decades war and insecurity not give opportunity to the public workers and researchers to do research and collect the real data to know the

level of the TB compliance and any other disease. but getting information and through conducting study and research facilitate us to know the level of the equity, effectiveness, efficiency to know the improvement toward the MDGs.

6.2 The factors influencing the compliance of TB patients

This study is aimed to determine the factors influencing the compliance of the TB patients in my province Kandahar regional TB hospital Afghanistan, so there was not any survey done about the compliance of tuberculosis to identified the real factors to be reliable, due to insecurity, in these years from 2001 after collapsing the Taliban's regime Afghanistan once again got a chance to be have every one there rights and started everything from zero to repairing the collapsed system in health still even more than hundreds of thousands Local and governmental, international and national NGOs, started their activities and working in Afghanistan, so they could not collect the data to be real data and acceptable the facts, they are doing some of the survies but its not clear and real data that's why? Due to war and security, if they did a survey in a province then they cannot do it in a target are completely then leave it due to war even in a province in related districts due to insecurity, or if they started in one critical area they can not survey all that area to collect the data to know the facts that is the reason that why there is not surveillance cleared still to know the fact is how much

6.3 TB Patients Compliance

Compliance of tuberculosis treatments recognized worldwide regarding MDR TB among the TB patients and as we know that TB is an important reemerging disease with increasing global morbidity and mortality due to relapse, default and MDR therefore. Tuberculosis control is hindered by patient noncompliance with treatment regimens. To study compliance to ant tuberculosis drug regimens, 172 patients diagnosed with tuberculosis during the first three months of 1995 were investigated. The patients were interviewed at their homes during July and August 1995. More than one-third (34.9%) of the patients were not adhering to the ant tuberculosis drug regimen. the Factors increasing drug Compliance included disease symptoms, knowledge about the disease, family

history of tuberculosis, beliefs and perceptions, hospitalization.,,,,,, etc, More information about the disease and the importance of compliance should be provided to tuberculosis patients at the time of diagnosis and initiation of therapy. Supervision of drug administration by health care personnel is stressed those factors which are influence the compliance of tuberculosis among the TB patients,

6.4 Related Factors Which Influenced Compliance Of Tb Patients

6.4.1. Age

Its reported in deference studies that older age are having higher probability of TB infection and in my study which I did in Kandahar Afghanistan also age is a biological factor which influencing the good compliance or poor compliance of tuberculosis and majority of the patients were over 20 years old up to 67 years so the reason for this is with increasing the age is decreasing immunity of the body and reactivation of tuberculosis , and the failure or default or relapse cases are itself showing the poor compliance of tuberculosis among the TB patients which still there is MDRTB, relapse and failure tuberculosis cases in my country (MDRTB 6.3) in 2007.

6.4.2. Sex

Logically male gender is more prone to compliance of tuberculosis but in my country Afghanistan its vice versa and 2/3 of the TB patients are women with compliance of tuberculosis and this high rate TB with compliance in women are tied up social, economical and psychological factors as well as they spend there most of the time at house and in kitchen which is ventilated with smoke filled and also some other factors such as women have no rights to make her own decisions and the husband is decision maker when get marry and leave her parents and also before married the parent's family make decision about the treatment continue or stop, lack of access to the health services too and stigma usually the people translate TB stigmatized is shame (SAAL, means TB in afghan language) when they stigmatized SAAL they feel shy and do not want to share with any one even with their members properly the young age girls.

6.4.3. Ethnicity

The ethnic minorities are more prone to the TB compliances and more likely to be positive and affected but in this study the bivariate analysis shown that

the majorities are \pashtoon group which have good compliance of the tuberculosis however that was not significant in the test.

6.4.4. Education Level

In Afghanistan illiterate people are more prone to the TB compliance than educated people because educated people are more concern about their health, in this study we could not find any significance because of small size and bivariate analysis shown higher educated are higher TB compliance than primary school graduated and than illiterate group.. but in the result showing no significance because the sample size is too small.

6.4.5. Low Income

In Afghanistan. Poverty is strongly related with tuberculosis compliance in all over the world Low socioeconomic condition, low education and low security are the increasing the tuberculosis positive cases with the compliances in community. so also in my experiences those people who had low economy and low income those are more likely to be complained and those are more suffering from TB compliances. and in bivariate analysis shown that, those patient which had high income had lower TB compliance comparing to those patients who had low level income but in result showing not significance due to small sample size.

6.4.6. Marital status

Relationship between marital status and mortality for both men and women, its shown that controlling for age the married has lower mortality than singles, the widow, the divorced that the deference between married and unmarried are much greater for men than for the women, its argued that these relationships can at least in part be attributed to the characteristic of the marital status in the society. but in Afghanistan mostly the mortality and morbidity of tuberculosis compliance is more in married than the singles. as in bivariate analysis shown that the those patients who are married higher compliance of tuberculosis than those who are single but the result is not showing the significance because of small sample size.

6.4.7. Knowledge

Many studies and researches shown that know of the community Is a big challenge still in every part of the world and that is one of the main reason of TB compliances that the people which have no knowledge those are more likely to be prone to the tuberculosis compliances as a study shown in year 1999 Vietnam that women are belief to be more compliance than to the men insufficient knowledge and individual cost during treatment were reported as main obstacle to compliance among men (poor compliance) while sensitivity to interaction with health staff and stigma in society (poor health staff and system compliances) were reported as the main obstacle among the women. but in Afghanistan the men have more knowledge comparing to the women that's why one reason is that the men are more educated the women, second reason men are always have more contact with situation and community than women and in this study also bivariate analysis showing those TB patient which have knowledge have lower compliance of tuberculosis then comparing to those who had not knowledge and result showing no significance because of sample size is much smaller. Knowledge of the community about compliance of tuberculosis is still the biggest challenge in Afghanistan that's why there is high curve of all diseases specially communicable disease which still has high mortality and morbidity as tuberculosis 40000 new cases finds each year and 8200 die in year 20008 estimated due to tuberculosis, knowledge of TB compliance is a problem in all developing countries as reatment literacy refers to providing accurate information about the science behind the disease and treatment so that the patients can be more responsible for their own care and be able to demand their rights when proper care is not provided (DeWalt et al 2004:1236). According to Smart (2010:1), knowledge and attitudes about TB and its treatment vary widely due to different cultural, religious or traditional beliefs, and access to education and information about the disease. Smart (2010:1), further states that patients" lack of knowledge of TB symptoms or failure to recognize them results in delays in seeking healthcare (Afari-Twunamasi 2005:25), DeWalt et al (2004:1238).

6.4.8. Barriers

Majority of the people in Afghanistan are complying and facing a big problem which is security and those people which are living in rural area those are more prone to tuberculosis compliance to be defaulted, relapsed or resistance, in this study (compliance of TB patients did by me in year 2009 in kandahar afghanistan) bivaraite analysis shows that the people who are having the barrier of security they are higher compliance of tuberculosis then others barriers. Many studies and research's in deferent parts of the world shown that Barriers to tuberculosis treatment compliance are a stumbling block or an obstruction in achieving what one wants to achieve. Previous researchers have identified the factors as stated bellow to be barriers to TB treatment compliance such as:

1. Patient literacy or educational level
2. Alcohol and substance abuse
3. knowledge of TB disease and treatment (*treatment literacy*)
4. Feeling better
5. Socio-economic factors
6. Employment and socio economic status
7. Cost of transport
8. Health system factors
9. Correlation between patient and program needs
10. Structural
11. Staff knowledge and attitudes
12. Compliance and non compliance to TB treatments

According to Namibia (2007:108), some of the barriers postulated to be contributing to poor TB treatment compliance are:

1. Communication difficulties
2. low literacy levels
3. Inadequate knowledge and low awareness of TB disease
4. patient attitudes and beliefs in treatment efficacy
5. depression and other psychiatric illnesses
6. Alcohol and substance abuse
7. Unstable living conditions

8. Negative health provider attitudes

9. Stigma and discrimination

Overcrowding and access to medicines.

But in Afghanistan some of the problems are same as the above factors found in the globally studies and including these a such common problem in Afghanistan is security everywhere around the country and one of the reason for the compliance tuberculosis patients is defaulters, resistant tuberculosis cases (MDRTB)

6.4.9. Patient literacy or educational level

In Afghanistan illiterate people are more prone to tuberculosis and more likely to be default or relapsed or failure than educated people as the bivariate analysis shown that educated people are higher good compliance then illiterate and illiterate are higher in not good compliance then educated people.

studies have tried to look at the relationship of the patients educational level to their health status, seen as important to gain a better understanding of the causes associated with adverse health outcomes, identifying patients at risk of such adverse outcomes and subsequently developing appropriate interventions (DeWalt, Berkman, Sheridan, Lohr & Pigone 2004:1236). 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). Several other studies have demonstrated educational levels of TB patients as significant predictors of treatment compliance (Balasubramanian, Garg, & Santha 2004:352; Date & Okita 2005:680; Johansson, Long, Diwan & Winkvist 1999:868; Mishra, Hansen, Sabroe, & Kafle 2005:1134). Meanwhile, a Malaysian study demonstrated that, among other factors, non-compliance was associated with completed secondary education (O'Boyle et al 2002: 307). Conversely, a study in Ndola (Zambia), found that age, marital status, and educational levels were not significantly associated with compliance (Kaona, Tuba, Siziya & Sikaona 2004: 68).

6.4.10. *Feeling better*

This is also barrier for compliance of TB patients in Afghanistan and when the patients become worse then refer to the doctor or any health facility after that when he or she improved and became healthy then they belief which in itself is barrier, and it's a challenge every part of the world properly in Asian developing countries and under developing countries deferent research's done about that as a study shown in Malaysia and Zambia that non compliance was associated with being free of symptoms((O"Boyle et al 2002:307; Kaona et al 2004:68).), Oftenly when patients commence treatment they will be very sick and may be inactive. However, as the treatment progresses and their condition improve, and symptoms start to regress, the improvement in itself may become a barrier to continuation of treatment. The patient might not see the need to continue with treatment when they are feeling better or well (Williams, Alarcon, Jittimanee, Walusimbi, Sebek, Berga & Villa 2008:731-35). In a Nepal cross-sectional study of 130 compliant and 25 non-compliant TB patients, 48% of the latter were more likely to think that they could stop TB treatment once they were free of symptoms and feeling well, because they thought they were cured (Bam, Chand & Shrestha 2005:51).

3.8. Hypothesis

- 3.8.1. Showing relation of socio demographic factors with compliance of the TB patients.
- 3.8.2. Showing relation of socio economic factors with compliance of TB patients.
- 3.8.3. Showing relation of psychological factors with compliance of TB patients

Age: old ages TB patients are higher compliance comparing to the young ages

Sex: the female TB patients groups are lower compliance comparing to male TB pateitns groups.

Ethnicity: pashtoon groups are higher compliance than others groups.

Educational level: higher (university) education are higher compliance comparing to the high school, primary and illiterates.

Marital status: marrieds are higher compliance compare to the single groups.

Income level: TB patients with high level income have 0.70(0.436%) times lower compliance comparing to the low level income.

Occupation: those who have jobs have 1.62(0.317%) times higher good compliance comparing to those who are jobless.

Knowledge: those TB patients which are good knowledge have higher compliance than those patients which have not good knowledge.

Barriers: those TB patients with barriers of security are lower compliance comparing to the others.

6.4.11. Limitations

1. In this study I only analyzed the factors which associated with compliance of tuberculosis based on the data which was collected from descriptive- cross sectional stud.
2. the calculated sample size for this study was 79 TB patients from 243 confirm TB patients which participated only 79 patients, and after analyzing there was no any significance that's why due to too small sample size.
3. Only the compliance of TB patients of Kandahar province (regional) was included in this study and investigation should be extended to similar types of institutions in the country.
4. the number of the TB patients compliance was too small for that reason I could not find any significance of the variables with the compliance of tuberculosis as it was supposed that the level significance to be more predominant in TB patients compliance of Kandahar –Afghanistan.
5. Working on a primary data in which I had not the psychological factors data which affecting compliance of tuberculosis patients in Kandahar Afghanistan.
6. This study conducted only in one hospital and the result might not be generalized to all hospitals because some of the related factors may be deferent in other provinces.
7. The sample size was only 66% which is n= 79 TB patients and i could not continive the interview due to limit budget and financial sources.

8. The questions for the knowledge and believe were limited in questionnaire which can be the reason for misclassification bias.
9. In this study i did no have the real data of psychological factors to analysed and interpreted because these related factors are still questionable in my country due to not did any exact survey to know the real situation.



CHAPTER 7 CONCLUSSION

7.1. CONCLUSSION

In this study indicates that subjects detained from Kandahar province regional tuberculosis (TB) center Afghanistan by a relevant of good compliance and not good compliance of TB patients anti TB treatment, according to the age of the TB patients which all the patients were study showing from age minimum 14 years old and maximum is 67 years old in this study (average 36,37years).

7.1.2. From total 79 studied participants 53% of the TB patients were not good compliance comparing to the good compliance which is 46%.

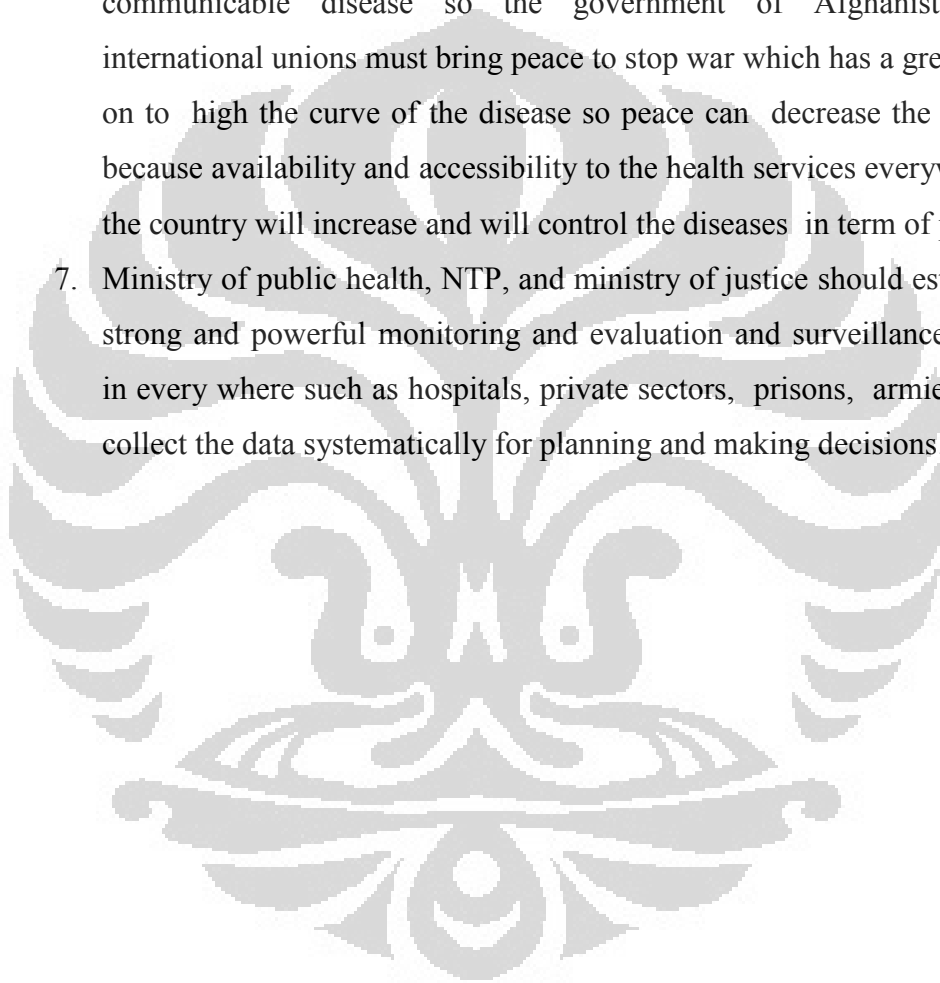
7.1.3 The result show no any significance and association of the factors (sociodemographic, socio economic) with compliance.

7.2. Recommendations

1. A Special attention should be paid to the compliance of TB patients treatment particularly pulmonary sputum smear positive patients in TB hospital, which they take their two months initial phase in the hospital to become negative during this two months to stop spreading and decreased the TB mortality and morbidity in the community.
2. High level of not good compliance indicates that the patients do not have knowledge about communicable diseases properly tuberculosis therefore mainly should be focused on health education importantly at schools for ten agers that we do not have it yet at country or provincial level.
3. all stake holders at national and international level should pay attention to provide and improve the current situation of the good compliance of TB patients in term of anti TB treatment, health education and behavioral change over all hygiene and personal hygiene of the TB patients and according to the standard repairing of the destructed hospital and reference laboratory is urgent
4. as mycobacterium tuberculosis is very sensitive to sun light facilitate the patients and encourage them to periodically spread their beds stuff

(mattress, pillow, bedsheet, blankets, cloths and dishes when ever at home or in the hospital in sun light will be decrease the level of infection.

5. MOPH and all donors should pay a special attention to vulnerable groups such as old age, weak, poor socioeconomic class, low level incomes because they are at greater risk of contracting infection and developing illness.
6. Insecurity and war is main trail of the diseases In Afghanistan specially communicable disease so the government of Afghanistan and international unions must bring peace to stop war which has a great effect on to high the curve of the disease so peace can decrease the diseases because availability and accessibility to the health services everywhere in the country will increase and will control the diseases in term of peace.
7. Ministry of public health, NTP, and ministry of justice should establish a strong and powerful monitoring and evaluation and surveillance system in every where such as hospitals, private sectors, prisons, armies. etc to collect the data systematically for planning and making decisions.



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Annexes

Annex -1

Informed consent

Project information

Title of project: compliance of TB patients take anti TB medicines

Sponsor: JICA Afghanistan

Organization: Department of Epidemiology, Faculty of Public Health, University Indonesia

Investigator: Dr Abdul Aziz Sediqi

Hand phone (mobile): Indonesia (+62(0)85782761558, Afghanistan (0093(0)799751851

Location: Kabul Afghanistan / Kandahar Afghanistan

Other investigators: advisor and co advisor faculty of public Health University Indonesia

Dear and respected Assalamaulaikum!

Your invited and kindly requested you to participate in this study which is going to be performed, the purpose is to discover the factors associated and influenced the compliance of tuberculosis patients anti TB treatment in Kandahar regional province regional TB treatment center, your selected by chance as a member in this study and which totally 79 TB patients from total 243 patients will participate in this study.

If you decided to participate after there interview (asking and ansering) procedures of this study to explain for you, we would like to ask you some of the questions regarding your treatment, family condition, marital status age, your knowledge and educational level and your disease how you affected, and after that we will give you an extra ordinary ID card from WHO to support you and give you food monthly for you and will be register here completely your residency. and your complete transportation cost and accommodation is supported by WHO. any obtained information which is collected related to this study will be save and confidential and disclosed only with your permission . no publication about the research will reveal your identity and your decision wether or not to participate will not prejudice or benefit your future relation with it. if you decided to participate your free according to your wishes you can discontinue this

participation at any time without any prejudice, because its completely volunteer participation as what is your wishes want it. if you had any question and compliance related to your disease treatment please do not hesitate to ask me to guide and help you any time and if you had any objections or any hope from the TB hospital or from your doctor you can share it with me any time, any where this is my phone number you can save it, Dr Aziz Sediqi phone number 0799751851 and I am investigator of this hospital and appreciates your any question related to your disease treatment any compliance and will be much happy to answer you. at the end of the interview I will show your information which I recorded to be sure your signature or thumb indicates that you can read or write or not, and also take a picture with me together and then you can have your picture with you to know me and not forget me until the end of your treatment to keep contact with me.

I hereby give my consent to participate this research study and agree to answer all your questions related to my disease and my collected information can be saved in the hospital.

Participant's name:

Signature :

Date of interview :

Participants' signature:

Name of the TB patient taking consent :

Signature of TB patient obtaining consent :

Date : / / 2009

Dr Abdul Aziz Sediqi responsible of investigator

Date : / / 2009



د عامې روغتیا وزارت
د کندهار د عامې روغتیا ریاست
د ساری امراضو د کنترول امریت
Ministry of Public Health

General Directorate Health Service Provision

Kandahar public health directorate

Regional tuberculosis diagnosis and treatment center

TB patients interview questionnaire

June, 2009

Province: Kandahar

Type of Health Facility: TB, diagnosis, treatment and food stamping for the patient

Code of Health Facility: 0028

Supervisor: PHD, WHO,

Date: 5th June /2009 to august 2009 Date: 5th June /2009

Issue: interview questionnaire for interviewing TB registered patients

Done by: dr aziz sediqi, dr abdul bari hayrat, dr mohamad hussain akrami

Approved by: dr abdul qayoom pokhla Kandahar public health director

Aim: to determine the factors influence the compliance of tuberculosis patients anti TB treatment

Supported by: WHO,

What questions should be asked during the interview?

Questions:

1. What is ur name ?
2. How old are you ?,
3. where do you live ?

4. How many person are you in your family ?
5. What is your job ? where? How much is your salary amonth?
- 6 why you skiped medicine?.what is your problem ? Did you contact your doctor ?
7. do you know the benefit o f this medicine? Is the doctor told you about the medicine?
8. Have you had the this problem before st arting the medicine ? how many months ?
9. did anyone had same disease in your family ? who was that ?
10. is he /she treated?
11. When, where?
12. do you know what is tuberculosis (TB)? What you know? If you have more than weeks cough have you refered to any clinic or hospital?
13. Are you agree and satisfy from your anti TB treatment? yes, how? No,why?
14. What is your family idea about your disease and anti TB treatment?
15. Have you taken any vaccine? Yes, do you know what was that vaccines ? no, do you have any scar of vaccine on you body?
16. Can you tell me the reason why you skipt you anti TB medicine?
17. What is your demand from staff and doctors in this hospital ?
18. do you believe what the doctors tell your disease and treatment ? do you know the side effect of your related treatment medicine ? yes, who told you about ? no, did your doctor tell you about that?
19. Have you read school? Primary or high school or university ?
20. do you have radio or television at home ?
21. are you married ? How old is your wife ? how many children do you have ?
22. are you pashtoon ? yes /no if no which ethnic you are ?(pashton, tajik, hazara, uzbek,... others)
23. Do you smoke ?
- 25.Do you have any adiction to norcotics? Yes/no, if yes what is that (canabis, opium or any)? No,
26. what is your main problem regarding your anti TB treatment?



دعامي روغتيا وزارت
دکندهار دعامي روغتيا رياست
دساري امراضو دکنترول امریت
Islamic Republic of Afghanistan

Ministry of public Health

Kandahar public Health directorate

Kandahar Regional TB diagnosis and treatment center

QUESTIONNAIRE

Interviewer's Name:

Date : 4th / july / 2009 to 4th / august /

N	Questions (doctor)	Code
1	What is your name?	
2	Gender	Male Female
3	are you pashtoon ?	1.pashtoon, 2.tajik,3.hazara.4.uzbak
4	Where do you live?(which province)	1.kandahar 2.zabul, 3.urzugan, 3, farah,4..nimroz.5.helmand
5	How many person are you in your family?	
6	What is your job ?	1.farmer.2.shopkeeper,3.teacher,4. cook, 5.soldier, 6.jobless
7	Why you stoped your medicine?what was your problem ? when? Is it first time ?	

8	do you know the benefit of this medicine? Is the doctor told you about the medicine? To stop or continue?	Yes. No, doctor not told me
9	have you had the this problem before starting the medicine? how many days since you started medicine?	Yes No I have not before but with drugs increased
10	is anyone had this disease in your family that you have it? who is that?	Yes (father,motheretc) refer to q10 No, only mine
11	is he /she treated? How long?	Yes completed No, not completed
12	When, where?	Inside /outside
13	Have you all lived together in home?	Yes No, because doctor said to separate the patient
14	do you know anything about this disease (TB)? What you know? If you have more than weeks cough what are you going to do?	Yes, No, I don't know
15	are you agree with your treatment?	Yes, because I improved No, because the drugs worsed me not improved me
16	what is your message to others about this disease same as you have it?	Refer to question 14
17	have you taken any vaccine? For what?	Yes No,

		I don't know
18	do you have any scar of vaccine injection in your arm?	Yes, on my arm No, I dont have
19	What is your demand from staff and doctors in this hospital ?	
20	do you believe what the doctors tell you ? What is told you?	Yes, No, because they don't know my disease
21	Are you educated ?	1. Primary school 2. High school 3. University
22	do you have radio or television at home ?	Yes, I heard about this disease in radio /television No, I cannot buy it
23	are you married ? How many children do you have?	Yes, No.

TB patients participated name list

the patients interviewed in 2009				
by Dr Aziz sediqi, and Dr Abdul bari hayrat				
ID	NAME	AGE	SEX	EDUCATION
1	Esmatullah	42	m	primary
2	Bibi Saira	54	f	high school
3	Muhebulla	27	m	primary
4	Raz M	48	m	primary
5	Parvana	23	f	university
6	Shirina	17	f	primary
7	Hikmatulla	62	m	primary
8	Najibullah	36	m	primary
9	shabana	29	f	primary
10	Sanga bibi	19	f	primary
11	Nigara	44	f	primary
12	Fazal m	35	m	university
13	Farid Ahmad	55	m	illiterate
14	Ahmad wali	23	m	primary
15	Pad shah	59	m	illiterate
16	marjana	25	f	illiterate
17	Qudratullah	40	f	primary
18	Zarlashta	27	f	primary
19	Zohra	66	f	illiterate
20	Talib jan	50	m	primary
21	Sami uollah	43	f	high school
22	zarko	47	m	primary
23	Sadiqullah	34	f	university
24	Mohamad khan	27	m	high school
25	Farid ahmad	67	f	high school
26	Marium	19	m	primary
27	Hikmatullah	53	f	high school
28	Abd nasir	54	f	high school
29	farzana	16	m	primary
30	Sooraka	33	m	high school
31	Mahmad khan	52	f	high school
32	Ahmad wali	18	m	primary
33	zardana	36	f	high school
34	Kari mullah	63	m	primary
35	M osman	47	m	high school

the patients interviewed in 2009				
by Dr Aziz sediqi, and Dr Abdul bari hayrat				
36	Sayeda	27	f	high school
37	Ajmal	44	m	high school
38	Basher Ahmad	15	m	primary
39	NoorAhmad/lal mahd	56	m	primary
40	Storay	45	f	primary
41	Afzal khan	36	m	high school
42	Gul jana	17	F	high school
43	Khatool	33	M	high school
44	Latifa	22	F	university
45	jamila	47	F	primary
46	Abdullah	55	M	primary
47	Lal mahmd	14	M	high school
48	Allah mahmad	17	m	high school
49	M kamran	15	m	high school
50	Gulalai	18	f	high school
51	Guldasta	40	f	high school
52	Sardar gul	37	m	high school
53	Faridullah	33	m	high school
54	Amir jan	22	m	high school
55	Fazal haq	31	m	primary
56	Baro gul	44	m	primary
57	Fatima	60	f	illiterate
58	nazanina	47	f	illiterate
59	Abdual ghafar	43	m	high school
60	Samee	30	m	primary
61	Abd ghafar	24	m	primary
62	Abd rauf	30	m	high school
63	Bib hazrato	64	f	primary
64	Taj bibi	51	f	primary
65	Karima	46	f	high school
66	Ajabgul	33	m	high school
67	gulabo	20	f	primary
68	Sardar bibi	18	f	high school
69	Abd malik	66	m	illiterate
70	Abd hakim	43	m	primary
71	Qudus khan	33	m	university
72	Abd tawab	51	m	high school
73	Dost mohmd	61	m	primary

the patients interviewed in 2009				
by Dr Aziz sediqi, and Dr Abdul bari hayrat				
74	Fida mahm	21	m	high school
75	Arifa	19	f	primary
76	Sayed ahamd	38	m	high school
77	Allah mahmd	25	m	high school
78	sadullah	16	m	illiterate
79	Abdu wadood	42	m	illiterate

THE END

Dr Abdul Aziz sediqi

International Master Student of Public Health University Indonesia