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Indigenous Healing Practices and their Effect on TB and HIV/TB Patients' Utilization and Compliance With Anti-TB Medication

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SIT Study Abroad

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Indigenous Healing Practices and their Effect on TB and HIV/TB patients' Utilization and Compliance with Anti-TB Medication

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Independent Research Project

SIT Study Abroad South Africa: Public Health

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Abstract

A sample of 27 Tuberculosis patients attending New Brighton Clinic in small urban community for treatment were surveyed and interviewed on their use of alternative treatments and interpretation of TB. This study specifically focused on TB patients' use of traditional medicine in treating TB and whether this use had an effect on the patients' willingness to utilize and adherence to anti-TB treatment from the clinic. Investigations were also done to characterize if an HIV positive status influenced TB patients' inclination to utilize traditional medicine. Through a focus group discussion with three traditional healers, information was provided on traditional medicine and indigenous interpretations of tuberculosis, which contributed to the creation of a quantitative questionnaire. From the data gathered from the questionnaire and additional interviews, 70% of patients claimed to have accessed alternative treatments which included traditional treatments, vitamin supplements and cough syrups not issued by the clinic. Traditional medicine was found to be prevalent amongst 59% of the patients sampled. In terms of adherence, patients utilizing alternative medicine during the clinic's TB drug regimen missed on average 6 more days than patients who refrained from using alternative treatments. Furthermore, the data indicated that 37% of patients tried utilizing traditional treatments, including consulting traditional healers, in order to cure the TB symptoms. These patients were found to on average wait while exhibiting TB symptoms for 20 more days before accessing the clinic, than patients who chose not to use any sort of alternative medicine to treat TB. HIV status was found to have no influence on patients' utilization of alternative treatments. From the analysis of data, conclusion were draw that the general public would benefit from receiving more education of identification of TB symptoms, cause, and treatment so access of treatments would be more expedient. Also, cooperation between the biomedical and traditional practitioners was found to be necessary in order to encourage patients to use and adherence to biomedical TB treatment.

INTRODUCTION

Over the recent years, the incidence of tuberculosis (TB) has increased so dramatically that the World Health Organization has pronounced TB to be “global emergency.” This resurgence of TB has been mostly attributed to the rise in HIV cases. In some countries in sub-Saharan Africa, 75% of TB patients have been found to also be HIV positive.¹ World wide, TB accounts for 13% of mortalities amongst AIDS patients². With the understanding of this deadly relationship between HIV and TB, extensive research has been conducted to investigate ways to improve treatment, cure rates, and prevention of TB amongst HIV patients. However, this medical crisis cannot be tackled by mere improvement of biomedical treatment because HIV and TB are diseases that are also entangled with numerous indigenous beliefs and interpretations that necessitate the use of traditional medicine. Thus in order to create an effective healthcare approach to the HIV/TB epidemic in South Africa, biomedical and traditional medicines should collaborate to form a pluralistic medical system in which HIV/TB patients receive a holistic type of care.

Traditional Medicine in South Africa

Traditional or indigenous medicine is defined by WHO as

[D]iverse health practices, approaches, knowledge and beliefs incorporating plant, animal, and/or mineral based medicines, spiritual therapies, manual techniques and exercises applied singularly or in combination to maintain well-being, as well as to treat, diagnose or prevent illness³.

From an anthropology perspective, indigenous healing practices are referred to as “ethnomedicine”, a term that distinguishes indigenous medicine from western biomedical medicine. Although from a different perspective, biomedicine can consequently be viewed as “Euro-American ethnomedicine”⁵ since western cultural practices have influenced its formation. More often than not however, these two medical systems are contrasted as opposite ends of the medical practice spectrum. In any case, both of these systems have been found to be efficacious in treating varying *illnesses*.

Over history, traditional medical systems have been vital in determining the health of the majority of people groups in Africa, whether in rural or urban areas. In fact, according to estimates by WHO, about 80% of the African population utilizes traditional medicines to treat a wide variety of health problems³. Accessibility and affordability of traditional healthcare contributes greatly to its prevalent use. For instance in Sub-Saharan Africa, the ratio of traditional healers to the population is approximately 1:500, while medical doctors have a 1:40,000 ratio to the rest of the population.⁶ In South Africa alone, the Public Health Department estimates that 200,000 traditional healers are currently practicing. In general, patients (especially those in the rural areas) choose to access traditional healers, since they are in their vicinity, rather than traveling for long periods of time to clinics and hospitals that have long queues and frequently a shortage of doctors and nurses.

Under the broad term “traditional healers”, four general categories exist: *songoma* or *igqirha* (diviners in zulu and xhosa languages, respectively) and *inyanga* (herbalist), *ababelekisi* (Traditional birth attendants) and *ingcibi* (Traditional surgeons),⁸ but only *songomas* and

izinyanga will be addressed in these study. Diviners diagnose illness through communication with ancestral spirits (mostly by throwing of bones) and some also prescribe herbal treatments, as do herbalists. Aliments treated by traditional healers encompass a range of illnesses interpreted in a cultural context and through personal perspectives. Therefore, these illnesses are not limited to “diseases” which refer to biophysical conditions that are defined in a western biomedical context.⁷ For instance, the interpretation of an physical or mental illness episode from a traditional healer’s perspective, often attributes causality to external supernatural forces sent by ancestor spirits, witchcraft, and ritual impurity.⁷ Beyond supernatural causes, natural causes are also recognized by healers as reasons for illnesses, especially those illness relating to children, old age, the blood, diet, environmental factors, body malfunctions, and heredity.

The Interplay of Indigenous Healing Practices in the HIV/TB Crisis

Traditional medicine plays a significant role in the management of tuberculosis and HIV/AIDS in South Africa.⁸ Illness episodes, in the case of this paper HIV and TB, are associated with certain meanings that offer explanations of their cause. HIV/AIDS is still largely interpreted as an *isidliso* (Black Poison) associated to the evil machination of witchcraft¹⁰. Adam Ashforth critical paper on AIDS as an epidemic of witchcraft in South Africa defines witchcraft as the “manipulation by malicious individuals of powers inherent in person, spiritual entities and substances to cause harm to others.”¹⁰ It is in this context of South African indigenous practices and beliefs that an estimated 97% of people living with HIV/AIDS have been found to use tradition medicine first, and only turn to a biomedical clinician once the ailment persists.⁶ In other words, HIV/AIDS, if interpreted as a supernaturally caused illness, necessitates the use of

traditional healers who have the capability of prescribing treatments that can counteract the *isidliso*. Furthermore, alternative treatments seem to offer a more holistic approach in caring for people living with HIV/AIDS. Certain *mutis* (herbs) and indigenous healing practices prescribed by the traditional healer help prevent and treat opportunistic infections, improve immunity, and also alleviate psychological problems like depression that usually affect HIV infected individuals.⁹

Therefore, it can be stipulated that HIV/ AIDS infected individuals who normally rely on traditional medicine continue to seek this form of treatment during the incidental onset of tuberculosis. Usually, traditional healers diagnose tuberculosis by visual examination of symptoms (coughing, weight loss, and night sweating), bone throwing if *Songomas*, or prophetic means. However, traditional healers' interpretation of the causal factors of the tuberculosis illness episode differs significantly from that of western biomedicine practitioners. According to most traditional healers, TB is a mode in which ancestor spirits order the afflicted to perform a certain ritual. In this case, the performance of the prescribed ritual acts as the treatment for the illness episode. Other healers interpret TB to be an *idliso* (poisoning) sent through food or witchcraft and so certain herbs are given to the patient that induce vomiting as a way of releasing the *idliso*.⁴ Yet in another interpretation, the transmission of tuberculosis is attributed to the inhalation of air infected by the coughing of other TB sufferers⁴. In any case, treatment differs depending on the interpretation of the causality and symptoms of the illness episodes. Some traditional healers have been known to give herbs to cure wounds in the chest that cause a bloody sputum, while others give herbs that 'cleanse the blood' of the illness causing particles. Lastly,

there have been cases where patients are required to slaughter goat or cattle as part of their treatment process.⁴

Overall, the treatments warranted by the traditional healers/diviners differ significantly from the antibiotics distributed at the clinics. From a biomedical perspective, tuberculosis is a mycobacterium caused infection that is curable through Directly Observed Treatment, Short-Course (DOTS). Combination tablet of rifampicin, isoniazid, pyrazinamide, and ethambutol is given for a period of 6-8 months depending on number of times infected.¹¹ However, the presence of a biomedical cure for tuberculosis might still be ineffective in controlling the TB pandemic if individuals suffering from TB usually have to choose to either utilize traditional medicines, western medicine, or sometimes a combination of both. Although some alternative treatments, like herbs, can undeniably be therapeutic for TB patients, other traditional treatments dependent on spiritual interpretation of the illness may not lead to a viable cure. In addition to the ineffectiveness of some treatments, there is the possibility of encountering toxic or harmful traditional medicines/ practices.¹⁰

Furthermore, patients utilizing a combination of biomedical and traditional medicine run the risk of encountering harmful drug interactions especially since prescribed traditional treatments usually lack characterized active ingredients and dosages. Traditional healers give some patients presenting TB symptoms certain *mutis* that induce vomiting and HIV/TB patients are also given treatments facilitated through enemas. Both of these treatments exemplify healing practices that could potentially pose as health risks to patients for TB infected patients could vomit blood

profusely after induced vomiting and diarrhea and dehydration are possible risk for patients treated using enemas.

From a broad perspective, patients' utilization of ineffective alternative treatments not only poses harm towards themselves but also to the surrounding population since untreated TB is contagious to others. An untreated person with active TB will on average infect 10 to 15 people every year². In this sense, the prevalence of indigenous curative practices as treatments of TB potentially acts as a factor fueling the spread of tuberculosis. Furthermore, some patients who do not experience immediate improvement of symptoms after taking anti-TB drugs discontinue their regimen and turn to traditional treatments. Incomplete treatments have immense consequences for the chances of developing a multidrug-resistant strain of TB (MDR-TB) increase. From a public health perspective, drug resistant strains are not only clinically more deadly, but also require more expensive treatment². Therefore, one can presume that the treatment of tuberculosis solely through traditional medicine has the potential of increasing the infection rate, mortality/morbidity due to TB, and unnecessary healthcare costs towards halting the epidemic.

With the understanding of the potential adverse consequences of treating tuberculosis solely with traditional methods, it's important to therefore characterize whether the use of traditional treatments and practices affects patients willingness to utilize, comply, and adhere to biomedical anti-TB treatments. Thus the intentions of this study were to investigate the prevalence of alternative treatments amongst TB patients and the extent to which these therapies were used to replace biomedical treatments. Furthermore, general investigations were made on the extent in which traditional healers acted as health counselors and promoters of the use of effective anti-TB treatment.

METHODS

Focus Group: Traditional Healers

A small group discussion with three traditional healers was conducted to gather preliminary information on the beliefs and practices surrounding the treatment of tuberculosis through traditional medicine. The discussion was informal but thorough and especially focused on the supernatural interpretation of illnesses since each of the three healers were songomas/amagqirha (diviners). In this study, holding a focus group discussion with traditional healers was crucial in creating a firm background on the sorts of practices and perceptions that the targeted group of TB patients might engage in. Therefore, the knowledge gained through the focus group became a tool used to build the questionnaire.

Information Gathered

Methods: Table 1

Traditional Healer's Background Information			
	Traditional Healer "S"	Traditional Healer "M"	Traditional Healer "Y"
Sex	Female	Male	Male
Age(years)	44	59	64
Ethnic Language	IsiXhosa	IsiXhosa	IsiXhosa

Each Healer was:

- Affiliated with a Christian denomination
- Trained and certified through other traditional healers
- Member of the Eastern Cape traditional Medical Practitioner: Nelson Mandela Bay Metropolitan Municipality
- Certified as a qualified Sangoma for at least 10 years.

Group Discussion

What is the difference between a Songoma/Igqirha and an Inyanga?

“There is a difference between a medical doctor and a pharmacist. A herbalist and a pharmacist are of the same status. Traditional medical practitioners igqirha...his/her status is equivalent to the western medical doctor. We also have specialists...who specialize on specific illnesses.” Y

“You don’t choose your life, with us, as in the western ...the spirits of the ancestors they guide you, they call you and they give you the certain kind of medication to use to help you specialize.” Y

“We [songomas] use spirits in checking sickness before we cure.” S

From the discussion, it was clear that the process of becoming a songoma was rigorous and virtually impossible without the direction and guidance of ancestor spirits. Thus from the healers’ point of view, being a sangoma was not just a mere profession but a higher calling ordained from birth.

How do you reconcile your belief in Christian doctrines and your belief and interaction with ancestor spirits?

“In the bible it is mentioned many at times, the very ten commandment that you should honor your mother and father, it doesn’t stipulate that you should honor them when they are alive...a sangoma is based on that.” Y

“Not that we don’t believe in God...we pray...we do everything” S

According to the healers, Christian doctrines did not contradict with their healing practices and involvement with ancestor spirits. In fact, the healers pointed out that the Christian God, in whom they believe in, was the one who called them to heal through their ancestors.

How do you diagnose the illness?

“With the help of the ancestors and the spirits.” S

“We communicate with the dead and we communicate with the living.” Y

When a patient came with a certain unknown illness, the sangomas usually throws bones whose position in landing acted as a message from the ancestors who communicated the nature of the unknown illness.

Why do TB patients come to you?

“They come to us because they have confidence, and secondary, confidentiality of patient’s illness is of great importance to us. We do some counseling ...there so many things which causes TB...traditional healer looks at the whole perspective of that particular person.” Y

In general, traditional healers perceived their healing practices to offer a holistic care including extensive counseling. Patients, according to the healers, felt secure in divulging personal information on their health disposition because the healer’s area of practice was exclusive and information did not spread to unwanted bystanders as in the case of the clinic. Traditional healers were also accessible and offered longer more personal care than in clinics.

How do you interpret and treat TB symptoms?

“Most probably TB is just some sign to that particular person that you must do a certain occasion, traditional ceremony.” Y “Sometimes TB symptoms are caused by idliso poisons sent by witchcraft. We thus give the patients mutis to drink that will cause them to vomit the poison. We chase away evil spirits with our medicines.” S

“Being a sangoma you know which herbs to use to chase away the evil spirits”Y

Black magic or witchcraft was largely perceived as a cause of TB-like symptoms. Evil spirits like Thikoloshe were sent to bring harm to the body and even a victim’s external affairs. In such

cases, explained the healers, biomedicine was virtually useless and only the traditional medicine prescribed by songomas could eradicate the idliso (poison) from a spiritual perspective.

Do you recommend patients to the clinic?

Yes we recommend but depends...on how far the patient has gone with the sickness.” S
“Sometimes a person might not believe that they are suffering from TB...I have to know if it is just a sickness which I will send them to the clinic but if it is not I will have to treat it with the spirits.” Y

What do you advise patients to do to protect themselves from HIV and TB?

“By using condoms, by going to clinic, by having one partner, by being faithful to your partner and be careful with blood” S

The advise was similar to the sort of advise that a biomedical health practitioner would offer.

Do you have patients who are HIV positive, what do you do for them?

“You counsel them to first accept their sickness...we give hope until the end.”

The sangomas showed the HIV patients that they can still live a long life; HIV is not the end.

Patients are advised to improve their diets, stop drinking and smoking cigarettes. However, the songomas complained that biomedical system has repressed the traditional healers’ attempts to treat HIV by discouraging HIV patients from consulting traditional healers.

What do you think of working with biomedical doctors?

“In order to work with us, you have got to understand us.” S

“The western doctors they undermine us.” M

“We can’t prove ourselves...They are scared that we are going to kill them [patients].”M

“They only associate genetics with what they see...but they don’t associate the genes with the spirits.” S

“I think that we are going to work hand in hand...but that has not happened yet.” M

There was a general skepticism amongst the traditional healers on the development of an equal partnership between traditional and biomedical practitioners. However, all three have gone through training on Tuberculosis and HIV, which they found to be informative and a positive contribution to their patient counseling.

Main Study: Setting

The research site was New Brighton Clinic located in New Brighton, a predominantly black township in the Nelson Mandela Metropolitan, Eastern Cape Province South Africa. New Brighton Clinic was chosen amongst two other clinics located in New Brighton for it served a population of 58,885 out of an overall New Brighton population of approximately 117,559 (50.1%) people. The TB Department of the Clinic operated by two contracting sisters, 1 regular and one less frequent community health workers/DOTS volunteers and lastly one regularly attending DOTS volunteer.

Methods: Table 2

General Characteristics of TB patients¹	
TB patients currently under treatment	147
TB patients receiving treatment by DOTS (clinic facility) ²	131
TB patients receiving treatment by DOTS (community) ³	16
Suspected TB cases for the month (those who tested)	147
Those found TB positive from the suspected cases	26
Of the positive, those who registered to receive treatment	18
Pulmonary TB cases cured during the month	2
Pulmonary TB treatment interrupted during the course of the month ⁴	2
Pulmonary TB patients who died during the month	2
Multiple Drug Resistant TB (MDR-TB) patients receiving treatment from the clinic	5

¹ Information gathered from the most current (October 2004) statistics generated monthly by New Brighton Clinic's TB Department.

² Patients who come to the clinic to take TB medication through DOTS (Directly Observed Treatment, Short-course).

³ TB patients who receive medication outside of the clinic following a directly observed treatment from any volunteer community member

⁴ Interrupted treatments are those that patients discontinue

Anti-TB Drug Regimen

Most patients receiving treatment at the New Brighton Clinic were tested by a two sample sputum tests analyzed by the National Health Laboratory Services in Port Elizabeth. The rest of the patients, especially those with pleural effusion TB were referred to Chatty Clinic, where chest x-rays were utilized to determine TB status. In the case of sputum tests, if any of the two samples of sputum is found to be positive for TB, a patient is considered eligible for treatment. The TB department does not collect samples for HIV testing, so TB patients are referred to New Brighton Clinic's ARV department for VCT (Voluntary Testing and Counseling).

All first time TB patients were put on a 6 months anti-TB drug regimen following Directly Observed Treatment, five days a week. Treatment began with the intensive stage where patients were given Rifafour tablets (the number of tablets was dependent on the patient's weight) for two months. After the two months, patients would give another sputum sample for testing and if negative, treatment advanced to the continuation phase with weight adjusted Rifinar (300mg, 150mg) drug treatment. This phase continued for the next four months until the final sputum test was found negative for tuberculosis. If after two months a patient's sputum was still positive, patient was kept at the intensive phase of treatment for an additional month and a culture test was done to check for patient's susceptibility to the anti-TB drugs. If after the one month extended phase the patient was found to still have positive sputum but susceptible to all drugs, then the patient was kept at the intensive phase regimen for a maximum of 5 additional months to the normal two months. After the additional 5 months, if sputum remained positive for TB but patients was still testing as susceptible to treatment drugs, then the treatment process was restarted as "retreatment after failure."

Patients who had previously had suffered another TB infection or interrupted the previous treatment, were put on longer drug regimen of 8 months, 5 days a week. Their intensive phase of three months involved Rifampin and 40 streptomycin injections. After 3 months patients' sputums were tested and those with negative results advanced to the continuation phase. Otherwise, positive sputum required an extended intensive phase. The continuation phase of five months involved a similar Rifampin regimen to that of new patients, but also an added dosage of Ethambutol (400mg). Any patients whose sputum results repeatedly remained positive after prolonged treatment, was further tested by culture susceptibility test for MDR TB. All patients with MDR TB were referred to SANTA Hospital for initial treatment.

Data Gathering

Throughout the course of a two-week research period, 32 TB patients who took their treatment through DOTS in New Brighton clinic facility volunteered to participate in this study after being randomly referred by the acting Sister. Only patients of New Brighton residence, older than 15 years, and not infected with MDR TB were to be utilized as part of the sample. After thorough teaching on the objectives and conditions of the study, patients were asked to grant signed consent of participation in the study. Xhosa translators were utilized in cases of language barrier, and consent and questionnaire forms were also available in Xhosa.

After granting permission, patients were asked to choose responses for standardized questions of the quantitative questionnaire (see sample of questionnaire in Appendix B). This survey was meant to capture their general views on biomedical and alternative medicine, and tuberculosis and HIV(if positive). Alternative medicine was defined to include not just traditional medicine,

but also any supplements or pharmaceutical drugs used by the patient to treat TB symptoms but not part of the TB drug regimen prescribed by a clinic/hospital. Also the questionnaire was used to gather data on missed days of treatment and duration of time while experiencing TB before going to the clinic. Information gathered from the focus group discussion with the traditional healers was utilized to generate questions and response choices for the questionnaire.

However, more in depth information regarding each patient's actions after encountering an illness episode and specific encounters with traditional medicine was gathered through oral interviews. patients' responses were recorded and transcribed. At the end of the quantitative questionnaire, each patient's TB medical records were examined to verify specific dates of treatment and level of adherence to the drug regimen. Adherence was measured by the number of treatment days missed by a patient. Any discrepancies between the patients' responses and the information written in the medical records were clarified during the interview. Furthermore, all interviews were conducted in a private room away from the healthcare workers to reduce the chances of patients giving answers meant to please or affirm the healthcare workers' expectations.

Patient Factors Investigated

- Gender
- Age
- Ethnicity/Language
- Religion
- Individual interpretation of tuberculosis (reason for infection and appropriate treatment)

- Alternative treatments or curative methods used specifically to treat TB
- Patient's response and actions towards an illness episode
- Length of time before going to clinic after encountering an illness episode.
- Patient's views of biomedical treatments
- Level of adherence to alternative treatment if used
- Compliance and level of adherence to antibiotics from clinic
- Reasons for failure to adhere or comply to antibiotic treatment
- Number of times infected with TB
- Duration of time as HIV seropositive

Statistical Analysis

General analysis of data (mean, median, SD) was done using Microsoft Excel 2002. However, in depth analysis of multiple regression, correlation, and significance analysis was performed using STATISTICA (version 6.0) software.

RESULTS

Out of 137 patients who were registered as treatment through DOTS in clinic facility, 32 volunteered to participate in this study. However, 3 refused to give consent and the sample was adjusted for non-MDR TB patients residing in New Brighton. Therefore, the final sample size of TB patients interviewed was 27 (19.7%). Two of the 27 patients had pleural effusion tuberculosis while the rest had pulmonary tuberculosis; 10 patients (37%) were undergoing retreatment due to a previous TB infection. On average patients had been on anti-TB treatment

for 76 days (\pm 49) with 12 (44%) of the patients having advanced to the continuation phase of treatment.

Results: Table 1 Summary of TB Patient's (Study Sample)Biographical Information			
		%	%
Gender	Male	52	
	Female	48	
		100	
Age (years)	15-25	30	
	26-35	18	
	36-45	30	
	46-55	22	
		100	
Education (Year in School)	0 Up to Standard 4/Grade 6		7
	Standard 5-7/Grade 7-9		33
	Standard 8-9/Grade10-11		37
	Standard 10 Matriculation		19
	First Degree		4
			100
Religious Affiliation	Apostolic church		30
	Other Christian Denominations		44
	None		26
			100
Home Language	IsiXhosa	93	
	Other	7	
		100	

When questioned on their HIV status, 6 patients (22%) responded as HIV positive, 8 patients (30%) as negative and 13 patients (48%) claimed to not have been tested. The interviews revealed that none of the HIV positive patients had consulted traditional healers but 5 of the 6 (83%) HIV patients had utilized alternative treatments {traditional medicine: 4 (80%); Supplements: 1(20%)} at some point in their lives. However, when questioned about their use of alternative treatments, each of the 6 patients claimed to never have engaged in any sort of alternative treatment meant to treat HIV or HIV related ailments (with the exception of TB). Only one patient was currently taking anti-retroviral drugs and all counseling for HIV testing (Voluntary Counseling and Testing) had been performed by biomedical healthcare workers in oppose to traditional healers.

Use of Alternative Treatments

Specific cases

- Patient 2 used garlic, epsilon salts and African potato together to cleanse blood.
- Patient 3 used garlic and African potato, and vitamin supplements (vitamin B, folic acid) to treat the TB symptoms.
- Patient 7 has used *muti* that he consumed after boiling to help with his painful joints. He consulted a traditional healer about his TB symptoms and he was given *muti* which he never used. Also, he made “energy drink” composed of the African potato but only used this drink before receiving anti-TB treatment from the clinic.
- Patient 10 has used *umhlonyane*¹ to treat a cough and flu but did not use them to treat TB symptoms.
- Patient 14 has used *umhlonyane*¹ to treat a cough including the symptomatic cough of tuberculosis.
- Patient 15 created simple remedies at home using vinegar, oil and sugar to cause coughs to subside. The patient used this remedy in an attempt to cure the symptomatic TB cough.
- Patient 18 only utilized alternative medicine in supplement form. She purchased industry processed african potato, Garlique (garlic supplement), Spirulina (a supplement also used by patient 16), and other vitamins from the chemist.
- Patient 19 had visited a traditional healer to received *imphepho*¹ to prevent bad spirits from invading his body. However, he withheld from the use of traditional medicine to treat TB.

¹ Refer to Appendix A

- Patient 20 visited a traditional healer in the wake of TB symptoms. She was given “black medicine” which repressed some of the symptoms but was not a cure.
- Patient 21 visited an *igqirha*¹ years before to receive treatments that cleansed the body, however he discontinued the uses of traditional medicine also long ago.
- Patient 22 has utilized remedies involving water, oil, salt, sugar and vinegar to treat a cough including the cough caused by her TB infection. She also used camphor to treat stomach problems and pains.
- Patient 23 has consulted traditional healers before but only to treat aches and painful joints. In order to treat the symptomatic TB cough, he drunk concoctions made of *umhlonyane*¹.
- Patient 24 and 25 used *umhlonyane*¹ to treat the cough caused by TB before going to the clinic.
- Patient 26, 29 and 30 used cough syrup from a pharmacy to try to treat the cough before going to the clinic to be examined.
- Patient 29 treated the cough resulting from TB infection by orally consuming a remedy of boiled chilies.
- Patient 32 consulted traditional healers with regards to the TB symptoms and he was treated using *muti* (african potato, sweet potato, other *muti* plus tortoise) that he drank and other *muti* were steamed for inhalation. He continued to use these herbs into the first month of his anti-TB treatment from the clinic.

¹ Refer to Appendix A

Out of a 27 patient sample, 7 (26%) had consulted a traditional healer due to an ailment at some point in their lives. However, only 3 (11%) TB patients consulted a healer for treatment of TB symptoms. Most patients verbally expressed their distrust of traditional medicine and three patients who had treated other sicknesses with traditional medicine explained their lack of interest due to the cost of traditional treatments, the traveling distance necessary to reach the traditional healer and the inconvenient methods of receiving treatment. All these problems, the patient claimed, do not occur at the clinic, where treatment was free of charge, the distance was in their vicinity, and treatment only required swallowing a few tablets.

Figure 1: TB patients' general use of alternative medicine/practices for any ailment

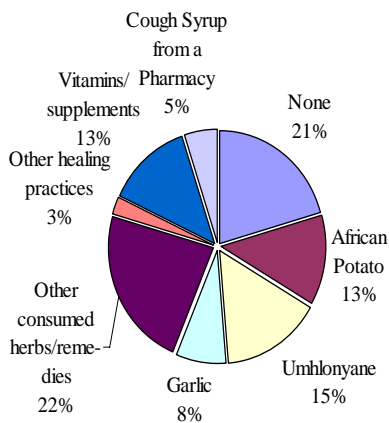
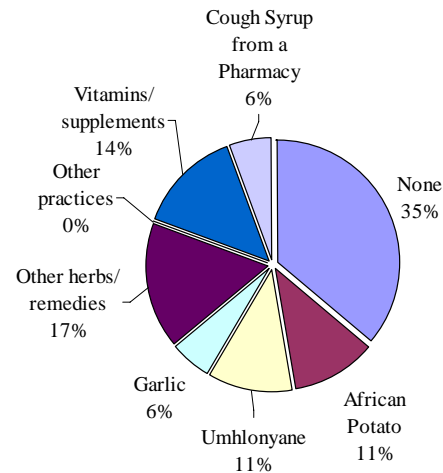


Figure 2: The use of alternative medicine/practices as curative therapies for tuberculosis



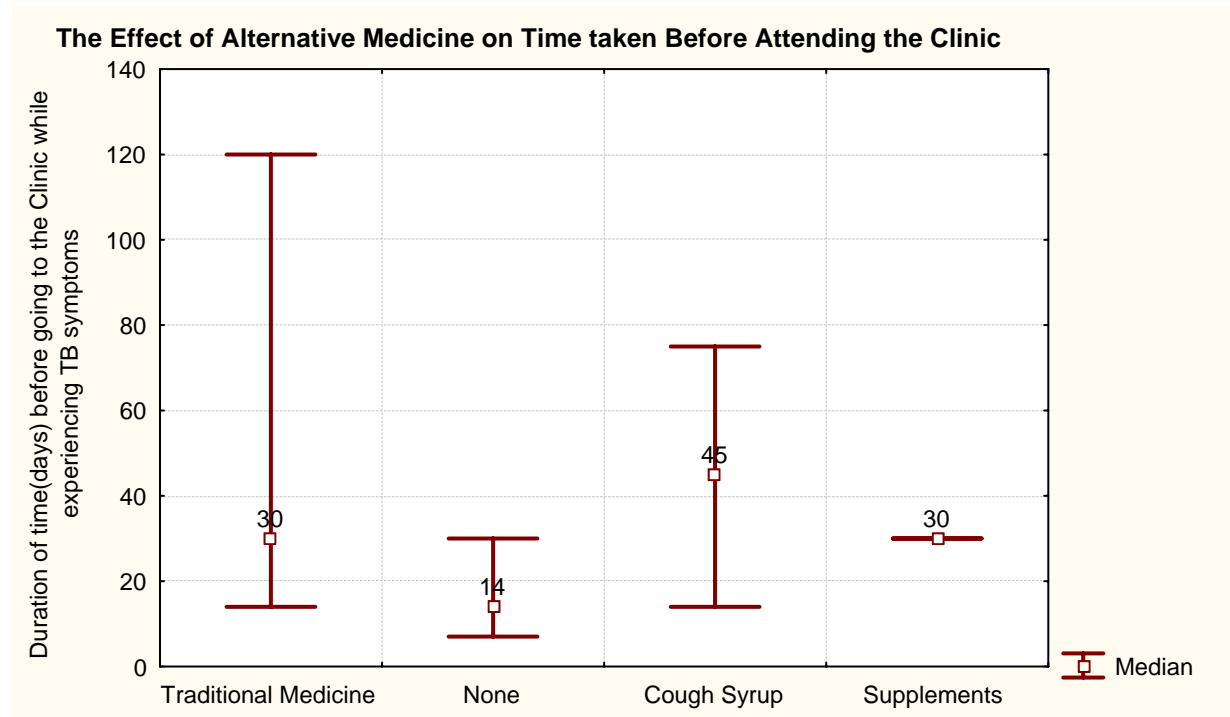
**Some patients used more than one treatment so some of the percentages are based on values that include overlapping use of the different types of treatments.

TB Patients use of alternative medicine was categorized into two distinct groups that not only showed the patient's sum interactions with alternative treatments (figure 1), but also those interactions used to alleviate TB symptoms (figure 2). 16 patients (59%) claimed to have used overall 19 patients (70%) reported to have used alternative treatments at some point in their lives with 16 patient (59%) having specifically used traditional medicine. However, the prevalence of

utilization of alternative treatments decreased to 13 patients (48%) when categorized as treatment for TB symptoms. Patients' specific use of traditional medicine decreased from 59% to 37% (Figure 2) when treating TB symptoms. Furthermore, the percentage of patients not utilizing alternative treatments increased by 14% when comparing general use (21%, Figure 1) to use of alternative treatments to treat TB symptoms (35%, Figure2). Given the small sample of patients used in this study, no significant correlations were found when comparing education, age, religious affiliation, and sex to the use of alternative treatments.

All 13 patients who used alternative treatments as TB therapies began utilizing these therapies at the wake of their TB symptoms before going to the clinic for treatment. Data was analysed to show whether the use of alternative treatment had an effect on the duration of time the patient endured with TB symptoms before going for treatment at the clinic. On average patients using traditional herbs/practices to cure TB symptoms waited for 41(SD \pm 35) days before going to the clinic; patients who took cough syrup purchased from a pharmacy took 45 (SD \pm 43); patients who self-treated using vitamin supplements waited for 30days and finally patients who withheld from any sort of alternative treatment only took 21(SD \pm 15) days.

Figure 3



Through the tabulation of the range of days taken before going to clinic for each category of alternative medicine, traditional medicine presented the greatest range of number of days with a minimum and maximum value of 14 and 120 days, respectively (see figure3). Only 2 patients used supplements to cure TB symptoms and both duration periods before going to the clinic were 30days (see figure3). Furthermore, data from the patients who did not utilize alternative treatments had a narrower range of days and the median value about half or less of the median values of the other three sub-groups of alternative treatment.

A multiple regression analysis model was done on all the quantitative data and it indicated that all the patient factors investigated (see methods) were able to predict up to 85.4% at $p < 0.05$ of why the use of traditional medicine before going to clinic for TB testing occurs amongst about

half of the TB patients sampled. However, there were no individual factors that had statistically significant partial prediction for the model. Results from a second multiple regression analysis showed that all the patient factors investigated in this study were able to predict up to 94.9% at $p < 0.01$ of why the use of alternative medicine during TB Treatment amongst TB patients. Consultation of traditional healers, general use of alternative medicine and interpretation of cause of tuberculosis were the only factors whose partial prediction was statistically significant for the multiple regression model.

Adherence to Anti-TB treatment

According to data gathered from the questionnaire, 5 patients continued to use some sort of alternative treatment during the period of receiving anti-TB treatment from the clinic. There was no significant correlation between the use of alternative therapies during TB treatment and the number of days missed of treatment. Therefore, a patient's adherence to anti-TB drug regimen was not significantly related to their use of alternative treatments. However on average, patients who continued to use alternative treatments during the course of their anti-TB treatment from the clinic missed more days 8 (SD ± 7) than patients who discontinued any use of alternative treatment during their anti-TB regimen, 0.4days (SD ± 0.8). Although, patients stated during the interviews different reasons than the use of alternative treatment to justify missing treatment, the data indicated that all 5 patients using alternative treatment during anti-TB treatment missed at least one day of treatment from clinic. In contrast, only 5 (29.4%) of the remaining 22 patients who did not use alternative treatments with the anti-TB regimen missed a day or more of treatment from clinic.

Interpretations of tuberculosis and perceptions on healing

Table 2: Patients' Views on the Cause of Tuberculosis

	¹ Number. of Patients	%
Idliso (Poison through witchcraft)	2	7%
Breathing TB infected air from someone's cough	11	41%
Other Contact with infected people	6	22%
Prolonged exposure to Cold air	4	15%
No knowledge on cause	4	15%
Other	2	7%

¹Respondents could choose more than one choice as the cause of their tuberculosis infection.

When questioned on the cause of tuberculosis patients, 63% of responses attributed cause to some form of contact or exposure to TB infected people. Only 2 (7%, table 2) patients interpreted TB as partially caused by *idliso* which was a cause supported by the traditional healers. 2 of the 6 patients who chose other contact with infected people claimed that sexual intercourse with an TB infected partner was the reason of their infection. Amongst TB/HIV patients, there was a basic understanding that HIV infects the body through sexual intercourse and no patient deviated from this response. All of the patients used included as part of the sample had experienced an improvement in health ever since the beginning of anti-TB medicine from the clinic. Thus 25 (93%) rated biomedical TB treatments as very effective and a cure for TB. On the other hand, 16 (59%) of the patients could generate not generate any sort of opinion on the effectiveness of alternative treatments in tackling TB infections.

DISCUSSION

In this study, the use of alternative treatments was found to be a common practice amongst TB patients residing in New Brighton area. 70% of patients sampled claimed to have utilized alternative medicine (includes traditional treatments, cough syrups, and vitamin supplements) to treat varying illnesses throughout the course of their lives. Overall in contrast to studies that show an estimated 70% of Africans access traditional medicine, only 59% of patients reported to have used traditional medicine and they therefore composed 84% of the number of patients utilizing alternative treatments. However, a smaller statistic than that of nation wide studies was expected since the setting of this study was only urban. Unlike rural areas which make up the majority of South Africa, urban populations have increased accessibility to clinics/hospitals than in rural areas, and also urbanization in general tends to popularize biomedical healthcare than traditional medicine.

One unexpected result found was that traditional medicine was more prevalently used as methods of self-treatment and not through the utilization of traditional healers. While 59% of the patients utilized traditional medicine only 26% had visited a traditional healer (usually songoma/igqirha) at some point in their lives. The knowledge of different medicinal herbs and remedies was vast amongst half of the patients but they all claimed to have gained this knowledge from family members or friends.

Implications of use of alternative treatment prior to going to the Clinic

The use of alternative treatments, as the sum whole of medicines prescribed or obtained outside of the clinic/hospital, seemed to have a direct effect on TB patients' time duration before consulting biomedical care once TB symptoms arose. In such cases where TB symptoms became apparent, about half (52%) of the patients would delay their visit to the clinic/hospital so to attempt to cure the symptoms (especially the cough) through self-medication or traditional treatments recommended by a *songoma/igqirha*. Though it was expected that patients would not immediately rush to the clinic after experiencing a mere cough, the results showed that patients engaging in tradition medicine prior to receiving treatment from the clinic waited for extremely long periods of time, ranging up to four months before visiting a healthcare facility.

Ironically patients admitted to have received only minimal improvements in health while utilizing alternative medicine. However in the patients' justifications of the long delay before going to the clinic, there seemed to be a general reluctance to realize the severity of their symptoms and a slight fear of labeling these symptoms as tuberculosis. This reluctance could possibly be attributed to the implications arising with the recent resurgence of tuberculosis amongst HIV patients. Tuberculosis, since usually linked with HIV, has become stigmatized as a direct indicator of someone's HIV status. In this sense, patients' reluctance to go to the clinic for TB testing could have been partially caused by their fear of realizing a positive TB status which might be perceived as an indication of a HIV positive status. Thus in the presence of a stigmatizing environment, patients might have been inclined to find self-medicating treatments rather than risking a trip to the clinic. This explanation could further support patients' choice to consult traditional healers prior to going to the clinic due to the sense of confidentiality

characteristic of healthcare provided by traditional healers. As expressed by the healers during the focus group discussion, the need for confidentiality, especially with highly stigmatized diseases like HIV & TB, becomes a crucial factor that influences patients' decision to access traditional practitioners.

However, perhaps the greatest factor that influenced patients' likelihood to utilize traditional medicine, prior to going to the clinic for testing, was their interpretation of the TB symptoms. Of the patients sampled, 7% interpreted the TB symptoms as caused by *Idliso* or an evil poison/spirit sent through witchcraft. As explicated by the *songomas* in the focus group discussion (see Methods section), TB symptoms labeled by the ancestor spirits as a product of the evil machinations of witchcraft, could not be treated through a biomedical approach.

Therefore, those patients who culturally interpreted the TB symptoms as caused by supernatural means were less likely to go to the clinic for treatment before first attempting to alleviate the symptoms through traditional treatments/practices that dealt with the illnesses supernaturally.

However in the case of TB patients also infected with HIV, all responded as to never have accessed traditional doctors or medicine to treat HIV or HIV related illnesses, with the exception of tuberculosis. Furthermore, none attributed the cause of HIV to supernatural forces which is possibly why they refrained from consulting traditional healers. This result contradicted statistics presented in the a presentation paper by Treatment Action Campaign and AIDS Law Project that stated that 97% of HIV patients used some form of traditional medicine to treat HIV⁶. In this study, however, the sample of 6 HIV positive patients was quite small and thud with the possibility of presenting skewed results.

Adherence

Another crucial aspect examined in this study was the effect the use of alternative treatments had on patient's adherence to anti-TB drugs. The continual use of alternative treatment during the anti-TB regimen was found to be amongst 22% of the patients sampled. Therefore, almost a fourth of patients found the coupling of alternative medicine with biomedical treatments to be a plausible solution to attaining maximum health without having to sacrifice either modes treatment. Unfortunately, when the treatments were coupled, adherence to anti-TB medication from the clinic decreased. The number of treatment days missed throughout a patient's treatment regimen was used as the measurement of adherence level. Analysis of the data gathered indicated that the correlation between the two variables (use of alternative treatments during anti-TB regimen and number of treatment days missed) was weak. However, the average number of treatment days missed by the group utilizing alternative treatments (7days) and the group not using these alternative treatments (0.4 days) indicated that there could be a tendency for patients to miss more days of treatment if they combine the use of alternative medicine with anti-TB treatment. Thus on days of missed treatment from the clinic, the patients (22%) utilized alternative treatments.

Patients who consulted traditional healers due to TB symptoms generally claimed that they would turn to traditional medicine if the anti-TB treatment was not effective. Consequently with such claims, interruption of the anti-TB regimen presented itself as a major negative implication if a patient resulted to traditional medicine after beginning anti-TB regimen. Interruption of treatment would potentially begin a problematic situation of possible development of MDR TB if

not secondary TB infections. In fact, interruptions or noncompliance to treatment occurred often enough that three retreatment patients who were sampled were undergoing treatment due to a relapse of tuberculosis infection after the interruption of their previous treatment. According to the New Brighton Clinic's monthly statistics of October 2004 (see Methods), 5 MDR TB patients were undergoing treatment at the clinic. Though seemingly a small percentage (3.4%) of the total patients receiving TB treatment, the prospective spread of such a virulent strain of tuberculosis warranted patients' stringent adherence and compliance to anti-TB drug regimen.

Pluralistic Approach as a Pending Solution

Overall the data gathered in this study demonstrated that despite the prevalence of the so-called "safe and more efficacious" biomedical healing practices, indigenous interpretations of tuberculosis and use of traditional treatments were still ingrained in the cultural practices of South Africans localized in New Brighton community. Unfortunately, the role of traditional medicine in patients' health was virtually ignored by healthcare workers in the clinic or deemed as having little positive consequence to the patients' health. Furthermore, healthcare workers in the New Brighton Clinic TB Department also maintained that no extensive follow-up on TB patients' use of alternative treatments was usually done. Thus there seemed to be little if any cooperation between health care offered in the clinic and traditional healthcare.

Idealistically cooperation between the traditional and biomedical systems would result in patients drawing from the expertise of both medical systems. However, categorizing these expertises would be a difficult task. Traditional healers as detailed in the focus group discussion, use varying types of practices to treat what would be regarded as one disease in the biomedical

sector. The South African government began to recognize the benefits of a pluralistic approach to healthcare by having recently passed the Traditional Health Practitioners Bill; although the translation of such initiatives have not yet reached ground levels including small communities like New Brighton. Therefore the goals of the Bill, to recognize and register traditional healers as credible healthcare providers¹², have yet to be initiated in New Brighton Clinic.

The government also formed an “Operation Plan for Comprehensive HIV and AIDS Care, Management and Treatment for South Africa” that encouraged traditional practitioners to join hands with biomedical practitioners in enhancing “the implementation of the antiretroviral component.”¹³ In general, traditional healers were found to be better counselors especially in VCT (Voluntary Counseling and Testing). The reason, as expressed by traditional healers during the focus group discussion, healers elicited more confidence from patients than general counselors in hospitals and clinics. Thus as foreseen by the Operation Plan, traditional practitioners could be utilized in “mobilizing communities [and] drawing patients into testing programmes.”¹³ In the clinic however, none of the HIV patients interviewed had ever been referred to traditional healers for counseling by biomedical healthcare workers.

Another initiative that was also procured by the South African Department of Public Health was to train traditional healers to identify defining symptoms of HIV/AIDS and TB. Once they identified these symptoms, traditional healers were trained to recommend these patients to primary healthcare facilities for testing and treatment. Beyond making patient referrals to clinics, healers were also encouraged to promote the use and adherence to effective anti-TB treatment. The reasoning behind this initiative was that TB patients who received instruction

from a traditional healer to complete an anti-TB regimen would most likely comply with the treatment more so than those patients without the same instruction. In the Eastern Cape for example, several local newspapers reported that education of traditional healers on HIV/AIDS and TB was already underway with 58 healers having successfully completed an HIV and TB course on October 15th, 2004. In fact, all three of the songomas interviewed in this study claimed to have received the training on HIV and TB and began referring patients to clinic when appropriate. However, none of the sampled patients who had consulted a traditional healer due to the TB symptoms claimed to have been recommended to the clinic by traditional healers. Most of these patients instead began to treat the TB symptoms using prescribed *muti* and thus remained infected and infectious for a longer period of time.

Beyond the interplay between the two medical systems, the data found in this study brought into light an interesting aspect that self-medication with traditional medicines was more popular than visiting traditional healers. In this sense, an effective pluralistic medical system to tackle TB would not only include biomedical and traditional practitioners but also the general population that utilizes self-medicating treatments/practices. Therefore, even as traditional healers were targeted for training to recognize signs of TB and HIV, the general population could also benefit from being served with the same information on knowing how to differentiate a common cough with TB symptoms. HIV patients in this study were well informed on the cause of the infection but the same was not true for all TB patients. However, patients' knowledge on HIV could be explained when taking into consideration the many methods of educating the public on HIV that have been initiated, ranging from VCT to television programs. On the contrary, TB having not received the same attention, resulted in some patients' limited knowledge of TB, especially the

cause, and their resolve to self-medicate before going to the clinic. The idea behind educating the public would not be to necessarily dispel their cultural beliefs/practices, but for patients to be encouraged to incorporate biomedical anti-TB treatment into their practices when dealing with symptoms of TB.

For future studies, it would be important to investigate further the role of self-medication amongst TB patients with larger samples. Furthermore, determining the extent of tuberculosis knowledge held by the general population and TB patients would be crucial in determining the need for educational initiatives on tuberculosis. Lastly, there was found to be a need to investigate how far the implementation of the initiatives to train traditional healers have progressed and more importantly if traditional healers were in fact being incorporated into the healthcare system of South Africa. Otherwise, a fractured healthcare system without unity amongst the three counterparts of a pluralistic medical system (biomedical, traditional, and self-medicants) renders tuberculosis an even greater foothold to continue devastating South Africa.

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Appendix A

Definition of Terms

Definition of Terms

1. Camphor- Small tree or shrub with whitish flowers. Leaves and twigs used to treat stomach and other types of aches and respiratory problems.
2. *Imphepho* (Xhosa or Zulu languages)- Everlasting (English name). A shrub type of plant that is crowned by yellow flower. Mainly, the leaves, twigs, and sometimes root are used for medicinal purposes. For instance: curing colds, coughs, fevers, and aches. It has a characteristic odor that when burning as incense the scent is attributed with the chasing of evil spirits.
3. *Inyanga* (Xhosa language)- traditional herbalist
4. Muti (Zulu language)- herbal treatment
5. Songoma/igqirha- a traditional healer who is a diviner
6. Umhlonyane (Xhosa or Zulu languages): African wormwood (English name). Highly odorous shrub with pale yellow flowers. Widely used in South Africa to treat colds, coughs, and the flu. The shrub also alleviates other disease or symptoms like malaria, fevers, ache, and loss of appetite.

Appendix B

Questionnaire

Indigenous Healing Practices and their Effect on HIV/TB Patients' Compliance with Anti-TB Medication STUDY QUESTIONNAIRE

Interviewer's name: Josephine Thinwa

INTERVIEWEE NO. _____

Interview Starting time: ____ : ____

Section 1: TB PATIENT BIOGRAPHICAL DATA

1. Age: _____
2. Sex of the Respondent: Male ¹ _____ Female ² _____
3. Race group: African black ¹ _____ White ² _____ Coloured ³ _____ Indian ⁴ _____ Other
⁵ _____
4. What is your nationality? South African ¹ _____ Other
²(specify) _____
5. Do you live in a local township around Port Elizabeth? (If no skip to question 7)
Yes¹ _____ No² _____
6. Do you live in New Brighton?
Yes¹ _____ No² _____
7. What is your home language (check one box)?
 - IsiXhosa¹
 - Afrikaans²
 - English³
 - IsiZulu⁴
 - Other (specify)⁵ _____

8. Are you a member of any religious group (ex: church or denomination)? If no skip to question 11.

Yes¹ _____ No² _____

9. If yes, to which church/faith/religion do you belong?

10. How many times a week do you participate in the functions of this group?

1-2 times ¹ _____ 3-4times ² _____ 5-6times ³ _____ more than 6 times ⁴ _____

11. What is the highest level of education that you have reached? **CIRCLE ONE NUMBER**

ONLY

No Schooling	1
Up to Std 1/ Gr 3	2
Std 2- Std 4/ Gr 4- Gr6	3
Std 5- Std 7/ Gr 7- Gr 9	4
Std 8- Std 9/ Gr10-Gr 11	5
Std 10 Matric	6
Diploma (s)	7
First Degree	8
Masters degree (s)/ Honours	9
Doctorate (s)	10

12. Currently, what is your marital status? **CIRCLE ONE NUMBER ONLY**

Married by magistrate	1
Married traditionally	2
Married religiously	3
Both married religiously and traditionally	4
Single	5
Divorced/ separated	6
Living with partner	7
Widow/widower	8
Other (specify) _____	9

13. Do you have any children less than 18yrs old who are dependent on you? Yes¹ _____

No² _____

14. If yes, how many children do you have? _____

Section 2: I AM NOW GOING TO ASK YOU QUESTIONS ON YOUR TUBECULOSIS

(TB) STATUS

1. Are you receiving TB treatment from clinic? Yes¹ _____ No² _____

2. **How long have you been taking TB treatment from the clinic? _____

Med Rec: _____

3. **How many times have you been tested positive for TB?

First time¹ _____ (skip to question 5) More than once² _____

Med Rec _____

4. If more than once, did you finish/complete the 6-8months of treatment on your previous

TB infection? Yes¹ _____ No² _____

5. **Do you have Multi-Drug Resistant TB (MDR TB)?

Yes¹ _____ No² _____ Don't know³ _____

_____ Med Rec: _____

6. How do you receive your TB treatment?

At home with DOTS volunteers	1
Come to the clinic	2
At home without DOTS volunteers	3
Have taken at the clinic and in front of DOTS volunteers at home	4

7. **Have you ever missed to take your TB pills during your current treatment?

Med Rec

Never	1	1.1
Once before	2	1.2
2-5 times	3	1.3
more than 5 times	4	1.4

If the answer is NOT Never refer to the qualitative questionnaire question. If never skip question 8.

8. On the days that you missed treatment, did you take any mutis?

Yes¹ _____ No² _____

9. How long were you showing symptoms of TB (coughing, loosing weight, loss of appetite etc) before you came to the clinic?

1-2days¹ _____ 3-5days² _____ about a week³ _____

about 2 weeks⁴ _____ about a month⁵ _____ more than a month⁶ _____

10. Are you HIV positive?

Yes¹ _____ No² _____ Have not been tested³ _____ Do not wish to disclose⁴ _____

Section 3: I AM NOW GOING TO ASK YOU QUESTIONS REGARDING HIV

POSITIVE STATUS. (If HIV negative, skip to Section 4)

1. How many years ago did you test as HIV positive? _____

2. How do you think you got HIV? (circle all that apply)

<i>isidliso</i> (black poison)	1
Any other witchcraft methods	2
Having sex with someone who is infected	3
Other contact with contaminated body fluids (specify) _____	4
Other (specify) _____	5

3. Have you gone to a traditional healer to receive treatment for HIV?

Yes¹ _____ (refer to qualitative questionnaire) No² _____

4. Did they recommend any *mutis* or treatments?

Yes¹ _____ No² _____

5. Do you take them with your anti-TB treatment?

Yes¹ _____ No² _____

6. Do you feel that these treatments have helped treat the HIV infection?

Yes¹ _____ (refer to qualitative questionnaire) No² _____

7. Are you currently taking ARVs?

Yes¹ _____ No² _____

8. Who counseled you for VCT (Voluntary Counseling and Testing)?

Traditional healer¹ _____ health worker in clinic² _____ Both³ _____

9. If you have been counseled by both, who do you feel counseled you better?

Traditional healer¹ _____ health worker in clinic² _____ No
preference³ _____

Section 4: I AM NOW GOING TO ASK YOU QUESTIONS ON YOUR INTERACTION WITH TRADITIONAL MEDICINE

1. Have you ever gone to a traditional healer for treatment (songoma, inyanga etc) due to an illness? Yes¹ _____ No² _____ (skip question 2)

2. Of which of these types of traditional healers did you visit? (**Check all applicable boxes**)

- songoma* or *igqirha* (diviners)
- inyanga* (herbalist),
- Other (specify) _____

3. Have you ever taken a *muti* before to cure an illness?

Yes¹ _____ (go to qualitative survey) No² _____

4. When you felt TB symptoms (coughing, loosing weight, loss of appetite etc) did you consult a traditional healer first before going to the clinic?

Yes¹ _____ (go to the quantitative survey and NEXT question) No² _____

5. If yes, did you feel better after following the traditional healer's instructions (eg. Taking muti)? Yes¹ _____ No² _____

6. Have you gone to a traditional healer anytime during your TB treatment?

Yes¹ _____ No² _____

If yes go to qualitative survey

7. Which of these treatments did the traditional healer give or do to you? (**circle all that apply**)

<i>Muti</i> that you eat/drink	1
<i>Muti</i> that you drunk and caused you to vomit	2
<i>Muti</i> that was rubbed onto your body	3
Made cuts on your body (scarification)	4
Asked you to sacrifice an animal	5
Asked you to breath in vapors with <i>muti</i> in them	6
Other (specify) _____	7

8. Which of these reasons do you think caused you to get sick with TB? (**circle all that apply**)

<i>Idliso</i>	1
Being kicked by <i>Impundulu</i>	2
<i>Thikoloshe</i>	3
Breathing infected air from some else's coughing	4
Other forms of bewitching(specify) _____	5
Other contact with infected people (specify) _____	6
Other (specify) _____	7

9. How well do you think medication from the clinic works in treating TB? (**Circle only one**)

Works very well/ cures TB	1
Works well but not a cure for TB	2
Does not work very well	3
Does not work at all	4
I don't know	5

10. How well do you think traditional medicine works in treating TB? (**Circle only one**)

Works very well/ cures TB	1
Works well but not a cure for TB	2
Does not work very well	3
Does not work at all	4
I don't know	5

Qualitative Questionnaire for TB infected Interviewees

I AM GOING TO ASK YOU QUESTIONS DEALING WITH YOUR TB TREATMENT

Patients with non-compliance or low adherence to TB medication

1. Why did you miss to take your TB treatment?
2. **In any of the days you missed your TB treatment, did you visit a traditional healer(s)?
3. If so, what did the traditional healer(s) tell you to do?
4. Why do you go to see traditional healers?
5. **On those days that you missed your medication, did you take any *mutis* or take any other treatments not from the clinic? Which ones?
6. Do you believe traditional healers can cure you of TB?

GENERAL QUESTIONS REGARDING HEALTH PRACTICES

7. What do you usually do when you get sick?
8. Why did you come to the clinic to be tested for TB?
9. What do you think is the cause of your TB infection?
10. Who recommended you to the clinic?

Patients who have gone to traditional Healers when experiencing symptoms of TB or during treatment of TB or who have used *mutis* before.

11. Where did you get the *mutis* from?
12. Who taught you how to prepare the *mutis*?
13. How many times have you gone to the traditional healer ever since you got sick with TB?
14. What treatments (e.g. *mutis*, practices) did the traditional healers recommend?
15. Which type of treatment do you prefer for treating TB? **WHY?**

From clinic _____ From traditional healer _____