RELATIONSHIP BETWEEN KNOWLEDGE AND SELF-CARE PRACTICES REGARDING TUBERCULOSIS TREATMENT AMONG CLIENTS AGED 20 – 40 YEARS AT BEATRICE ROAD INFECTIOUS HOSPITAL OUTPATIENT CLINIC

by

Shenny Caroline Gumeyi

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University of Zimbabwe

Department of Nursing Science

Faculty of Medicine

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ABSTRACT

Tuberculosis is a worldwide public health problem with a continued increase in both morbidity and mortality. It has been compounded by HIV/AIDS pandermic. Tuberculosis is widely known to affect the most economically active group, with 99% of all TB death occurring in the developing countries. Directly Observed Treatment Short Course is an internationally recommended approach adopted to improve self care practices as adherence among the clients on tuberculosis treatment. In Zimbabwe over 40,000 cases were reported in 2007 at a rate of 302 per 100 000 population, compared to 402 per 100 000 in 2000. The purpose of the study is to examine the relationship between self-care practices and knowledge among 20-40 year old clients on tuberculosis therapeutic management at Beatrice Road Infectious Disease Hospital Outpatient Clinic. Orem's self-care nursing model was used as a conceptual framework. The study used descriptive correlation design. The study included a random sample of 80 subjects comprising 48 females and 32 males aged between 22 to 40 years. The interview schedule contained closed ended structured questions on the demographic data open ended and closed ended questions on dependent and independent variables. Data was collected and analyzed using descriptive and inferential statistics. The results of the study showed a significant low positive Pearson correlation coefficient of ($r = .354$, $p^* < 0.01$) implying that as knowledge increases self-care increases. Regression analysis $R2 = .125$ expressed as percentage 12.5. This implies that knowledge accounts for 12.5% of the variance in the self-care practice. F Statistics = 11. 140; $p = .001$). Therefore there is need to reinforce individualized health education and counseling of clients. For self-care to be effective, the clients should have knowledge skills to do self-care (Orem, 1991).

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CHAPTER 1

BACKGROUND AND ORGANISATIONAL FRAMEWORK

Introduction

Tuberculosis remains one of the most pressing public health problems in Zimbabwe. The most effective measure in control remains the detection and cure of infectious patients as well as notification, monitoring and evaluation (WHO 1998). The Government of Zimbabwe through the Ministry of Health and Child Welfare (MOH &CW) came up with a Tuberculosis control strategy which was revised in 1999 using the directly observed therapy and short course (DOTS).

In this chapter the background information, the problem statement, the purpose of the study, the objectives, the questions, conceptual definitions and the significance of the study was discussed.

Background information

The World Health Organization (WHO) declared Tuberculosis (TB) a global public health emergency in 1993 and since then has intensified its efforts to control the disease worldwide (WHO, 1994). Despite these efforts there were an estimated 8.7million new cases of Tb worldwide during 2000 (WHO, 1993). The rapidly increasing rate of Human Immuno Virus/ Acquired Immuno-Deficiancy Syndrome combined with escalating poverty and collapse of the public health services in many settings have contributed to this serious situation (WHO, 2003).

In the Sub-Saharan region, tuberculosis continues to be the leading killer disease among the adults especially in their reproductive years of life. This epidemic is escalating and destroying families (Ndudzo, 1996). Diagnosis was more difficult and response to

treatment though initially was good it eventually became less effective. Patient's adherence to prescribed treatment which was difficult before the Human Immuno Viral Infection had worsened. This was compounded by the multi drug resistance which was becoming prevalent in this region due to irregular drug supply and inappropriate prescription. In Swaziland multi-drug resistance strains of TB had become a major concern contributing to high mortality rates. The drug resistance to standard first line treatment for TB was reported to be 200 cases each year, (Abed, 2002).

In Zimbabwe, Tuberculosis remains one of the major public health problems. Zimbabwe is ranked as one of the 22 high burden countries in terms of TB in the World wide (WHO, 2000). In recent years Zimbabwe has reported a dramatic increase in the number of new cases of TB due to Human Immuno Deficiency Viral pandemic. The notified incidence of Pulmonary Tuberculosis increased from 96 per 100 000 in 1993 to 355 per 100 000 in 1997, (WHO, 2000). In 1996 the total cases notified were 9 132 and deaths were 836. These figures continued to rise and in 1997 43, 766 cases and more than 3 500 deaths which could have been prevented with effective treatment were reported (WHO, 1997). Tuberculosis was among the top five conditions causing hospital morbidity and mortality. It was the commonest disease causing mortality among people living with HIV/AIDS, (WHO, 2008).

The World Health Organization recommended the Directly Observed Treatment Short Course (DOTS) in 1995, an international strategy for the control of TB. The main element of the strategy involved the use of standard courses of drug therapy of which clients took their treatment under direct supervision of trained people. This step would prevent clients from failing to complete their course of treatment. World Health

Organization had set a target of 85 percent for treatment success.

Problem Statement

Tuberculosis is a chronic condition requiring prolonged treatment. It is an infectious disease which is caused by myco bacterium tuberculosis and is spread through inhalation. Tuberculosis kills 32 million people each year Worldwide, (Abed, 2002). It is reported that 8 million people become ill with Tuberculosis each year and over 1.5 million TB cases per year occur in Sub-Saharan Africa. If left untreated, each person with TB will infect on average at least 10 to 15 people every year (WHO, 2000). Tuberculosis once thought to decline but has trebled in incidence from 96.9 per 100,000 in 1990 to 267.5 per 100,000 in 1995. This has been heavily influenced by HIV causing an increase of 402/100,000 in 2000. In 2007 Zimbabwe reported 138,866 cases as tuberculosis new and relapse. There was an incidence of 1136 per 100,000 population (WHO, 2008).

Approximately nine million new cases of TB have been reported annually by World Health Organization (WHO) for the last 3 years with an estimated 55% in Asia, 33% in Africa and the rest in the America's, Europe and Eastern Mediterranean regions (MOHFCW, 2008).

World Health Organization declared Tuberculosis a global emergency in 1993 and Directly Observed Treatment Short Course was adopted in order to combat the disease, (Ministry of Health and Child Welfare report of 2008). World Health Organization adopted the STOP TB strategy in 1996 to strengthen and pursue the quality of DOTS and its expansion. This will also empower people with knowledge about tuberculosis and promote adherence to therapy (MOH & CW), 2008). Chemotherapy is

the most powerful weapon in Tuberculosis which reduced risk of death from Tuberculosis aiming at restoring health through cure, (MOH & CW, 2008).

Despite the above, Tuberculosis burden remained high, people had problems adhering to treatment and the reasons for this are not clearly understood. The most difficult task for Tuberculosis control was to convince clients to take their medication regularly and for the required duration.

In an analysis on treatment outcome from 1996 to 2001, treatment success ranged from 62-71% but still not reaching the 85% target set by the World Health Standard using the DOTS treatment strategy. The number of deaths reported were 12%, defaulters ranged from 12% in 1996 to 6% in 2001 and multi-drug resistance was 1.4% (MOH & CW, 2004). According to Dimatti (2002), non-adherence to medication prescribed over long periods of time was generally common and it ranged from 50-70% Non-adherence to Tuberculosis treatment was not unique to Zimbabwe alone but also regionally and internationally. According to Edington (1997), in South Africa, 25% of health center based DOTS programme clients failed to complete treatment for tuberculosis.

Globally, in India, Kativar et al (1995) reported that more than one third (34.9%) of clients were not adhering to the anti-tuberculosis drug regimens, 61.72% of whom defaulted within three to five months of treatment and 88.8 percent (%) within 8 months. This report followed a study on compliance on pulmonary tuberculosis.

In another study in India by Santha et al, (2002) which indicated non-adherence to treatment was considered a serious problem hindering tuberculosis treatment and control. It was acknowledged that non-adherence to anti-tuberculosis drugs was acknowledged as the major cause of treatment failure, drug resistance and a five to six fold increase in

tuberculosis relapses as well as contributing to emergence of resistant mutant strains of myco-bacterium tuberculosis (Gad, Mandil, Sherit and Sallam, 1997).

Harare city health department had seen a growing number of tuberculosis clients seeking treatment as seen by the number of clinics having been decentralized to offer Tuberculosis treatment services. The clients who visited Beatrice Road Infectious Disease Hospital Outpatient Clinic on daily basis ranged 20 to 30 per day which were 100-120 approximately per week. Those clients had completed intensive phase would be returning to be reassessed for commencement of continuation phase. In Bulawayo city health department the second largest city in Zimbabwe, cases of pulmonary tuberculosis had steadily been increasing since 1992 and in 1998, 6 029 cases were referred as compared to 550 cases reported in 1984 (Bulawayo City Annual Report, 2004).

Non adherence to anti-tuberculosis drugs was a problem and when drug resistance strains occur this was difficult to treat, (AL-Hajjaj & Khatim, 2001). Those usually required prolonged hospitalizations and isolation in a specialized centre. More financial, human and material resources would be needed to try and identify new drugs to combat MDR-TB strains as well as caring and care for the very ill clients. The more the clients spend more time in hospital the more productive time was lost. More people would be dependent upon others for survival worsening the already strained lives due to economic hardships. This problem affected government budget allocation.

Tuberculosis treatment can be effective if the clients maintain adherence. Therefore the clients need a sound knowledge of tuberculosis and importance of chemotherapy. Knowledge of DOTS and effectiveness in controlling tuberculosis enhanced adherence to chemotherapy and gives high cure rates and reduction to drug

resistance (WHO, 2002). In a study on the relationship between knowledge on DOTS and adherence to treatment there was a significant positive relationship ($r=0.26.p<001$) between the two (Marufu, 1999).

Pozsik (1993) identified that knowledge alone cannot guarantee behavior change. He maintained that health workers have a responsibility of identifying, enabling as well identifying hindering related factors that contributed to non-adherence. The importance of counseling and provision of accurate information to all clients is an important determinant of treatment adherence (MOH&CW Zimbabwe, 2005).

Improvement in standards of living plays an important role in tuberculosis management. In India a study conducted by Kolappan, Subramani in 2001 to
2003 was to quantify the association between biomass usage and sputum positive pulmonary tuberculosis. This showed how improvements in standards of living brought about by economic development would lead to more people using cleaner fuels for cooking than biomass fuel which in turn would lead to a reduction in the occurrence of pulmonary tuberculosis in the community. Biogas is any material derived from plants or animals which is deliberately burnt by human beings and is used for cooking as fuel. It is a risk factor for tuberculosis. In addition, people with low or medium standard of living which includes economic status, over-crowding, type of house and assets were also at risk.

World Health Organization (2008) reported that an estimated 500 000 persons in the world developed MDR TB largely as a result of inadequate TB control activities including adherence to treatment. This problem might have been further compounded by further increasing numbers of migratory and displaced populations. Many developing

countries provide free TB treatment of which Zimbabwe is no exception. Some countries only provide free TB treatment on the first line and charge fees for second line treatment leading to unaffordability, (WHO, 2008).

Self-care practices are activities an individual performs aided or unaided in order to maintain a healthy life, (Orem, 1991). Self-care practices are patterned and sequential actions which when effectively performed contribute in specific positive ways to human structure integrity, human functions and human development. For self-care to be effective, the clients should have knowledge, and skills to do self-care (Orem, 1991).

The available literature reported many different factors associated with non-adherence as a self-care to tuberculosis treatment. Therefore the investigator intended to investigate whether quality of knowledge imparted to clients contributed largely to the client's adherence behavior towards treatment for pulmonary tuberculosis. Knowledge usually given on discharge as a plan that's viewed as a process and a service in which client's needs are identified and assistance is given in preparing patient for self-care (Jackson, 1994).

Purpose of the study

The purpose of the study was to examine the relationship between knowledge and self-care practices regarding tuberculosis treatment among 20-40 year old clients at Beatrice Road Infectious Disease Hospital Outpatient Clinic in Harare.

Research Objectives

The objectives of the study were to:

1. Determine the knowledge of clients with pulmonary tuberculosis regarding their treatment.

2. Establish the self care practices of clients with pulmonary tuberculosis regarding their treatment.
3. Determine the relationship between knowledge and self care practices regarding pulmonary tuberculosis treatment.

Research Questions

The study sought to answer the following questions.

1. What knowledge do the clients with pulmonary tuberculosis have regarding their tuberculosis treatment?
2. What self-care practices about tuberculosis treatment do clients with pulmonary tuberculosis possess?
3. What is the relationship between knowledge and self-care practice among clients with pulmonary tuberculosis regarding the tuberculosis treatment?

Theoretical Framework

Theoretical framework is an abstract logical structure of meaning that guides the development of the study and enables the researcher to link the research findings to the nursing body of knowledge (Burns and Grove, 1993). The research, theoretical framework consists of interrelated concepts that are assembled together in the same relational manner by virtue of their relevant to a common theme (Polit & Hungler, 1995). Orem's self-care model (1991) was be used to guide this study.

The major concepts adopted from the self-care model were self-care, self-care nursing agency supportive-educative system. According to Fawcett (1995) self-care agency is the human ability to meet one's continuing requirement for self-care. It was also defined as the ability of an individual to meet some or all of self-care (George,

1995). Self-care deficit is when nursing or an intervention is required due to incapability or limitation in the provision of continuous effective self-care.

The self-care knowledge to be established in this study specifically pertained to knowledge on pulmonary tuberculosis treatment. Knowledge on pulmonary tuberculosis would enable the clients to care for themselves and adhere to treatment hence promote cure. Such ability to take treatment consistently was presented in Orem's model to be the self-care agency. This meant adherence was met. The ability was affected by basic conditioning such as age, gender, development state, health state, social cultural orientation and health care systems. In adult clients who were ill nursing care or nursing systems concept, which was designed by the nurse, the client and family outlined how self-care needs were met as a team. Knowledge acquired would enhance skills for decision making and behavior change so as to correct the self-care deficit which was failing to complete treatment as prescribed.

The theory of Orem's self-care deficit explains when and why nursing care was required. According to Ndudzo (1996), clients who do not adhere to treatment can benefit from nursing as they may have health related limitations that would require whole nursing care namely wholly compensatory due to self-care deficit (Orem, 1990). Nursing systems were formed when nurses use their ability to prescribe design and provide nursing.

The three types of nursing system therefore identified as wholly compensatory, partial compensatory and supportive-educative had demonstrated that it was possible to reverse pulmonary tuberculosis epidemic by adopting Directly Observed Treatment Short-course (WHO, 1995).

Wholly compensatory nursing care was when the nurse actually performs activities of daily living thus compensating for the clients with total inability. This happened when a client with pulmonary tuberculosis was very ill and hospitalized, for example, comatosed. Partial compensatory nursing care exists when the nurse performed some of the nursing activities while the client performed the other activities, for example, recovering.

In supportive-educative nursing systems, the nurse would be required to assist the client in making decisions and acquiring skills as well as knowledge (Orem, 1991). For this study the concept of supportive-educative nursing system, the nurse assisted the client in decision-making which would influence the self-care agency which in turn promoted self-care and behavior change. Once empowered with knowledge on treatment of pulmonary tuberculosis the client would adhere to take the treatment so as to be cured. Therefore knowledge was a powerful element to promote adherence to treatment.

Orem's theoretical framework was be used to explore the effect of the dependent and independent variables. Self-care practices adherence and knowledge respectively based on Orem's self-care model. Knowledge was referred to tuberculosis therapeutic treatment which the client needed to acquire through supportive and educative system. The nurse guided and supported the client to participate in the self-care practices. The client would be the self-care agency who should be empowered with knowledge and skills to care for self. Such as patient who had been discharged from hospital who needed knowledge on information, advice to take treatment with accuracy. The self-care demands are influenced by self-care requisites (Orem, 1985).

Theoretical Framework

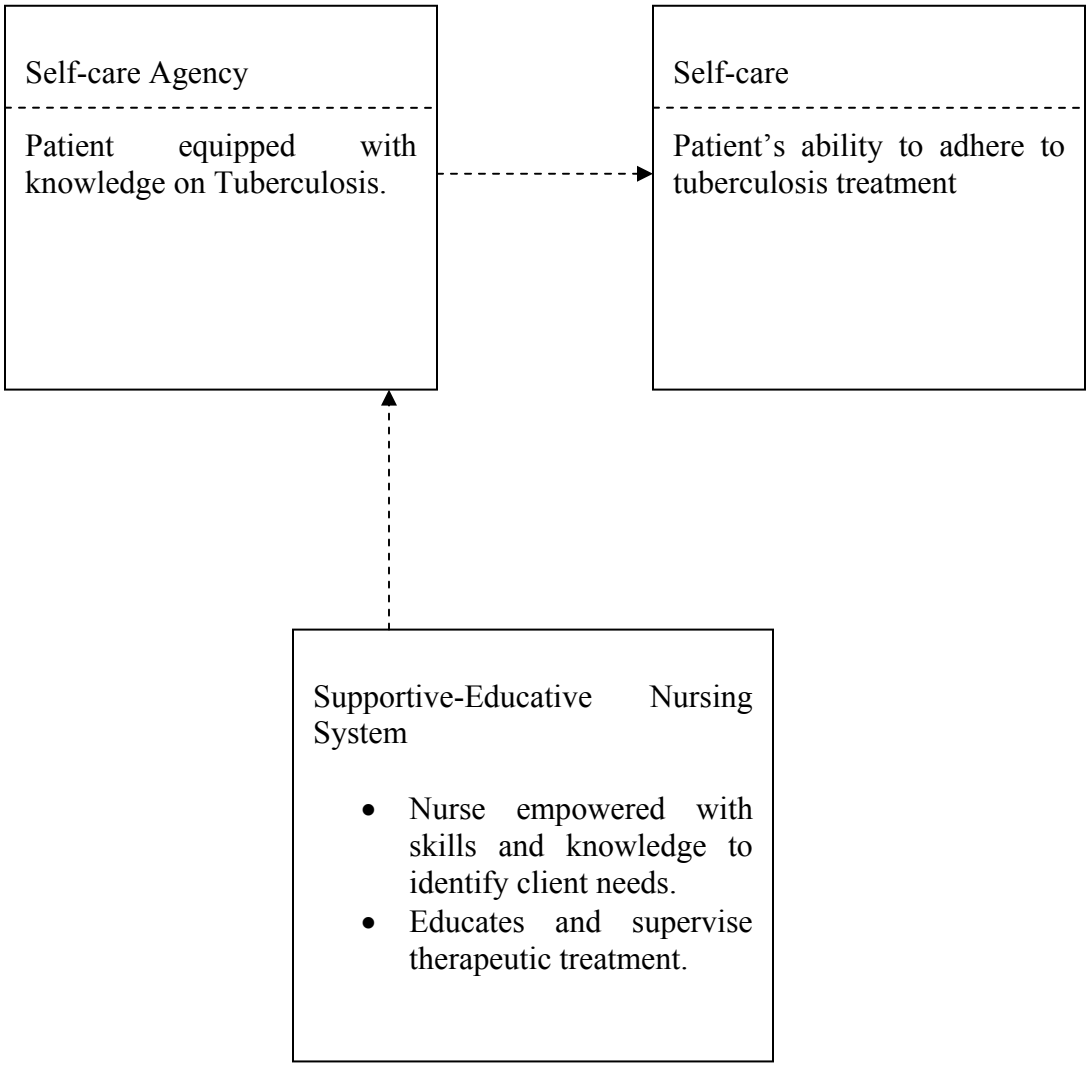

Fig 1:1 Orem's Self-Care Model (1991) Modified to study

Conceptual Definition of Terms

Self-care knowledge of therapeutic treatment of pulmonary Tuberculosis

Self-care practice: Is the practice of activities that the individuals initiate and perform on their own behalf in maintaining life health and well being (Orem, 1990).

Self-care Agency: Self-care is the capability of individuals to take care of themselves in their environmental situations and have power to act deliberately to regulate factors that affect their own functioning and development. (Orem,1991). The client is viewed as having the potential to perform self-care agency.

Self-care deficit: Self-care deficit is when the nursing or an intervention is required due to limitation or incapability in the provision of continuous effective self-care. The self-care deficit to the relationship between self care agency therapeutic self care demands of individuals in which capabilities for self care because of existing limitations, are not equal to meeting some or all of the components of their therapeutic self-care demands (Orem, 1995). Limitations in self care practices that is adherence due to knowledge deficit.

Supportive-Educative Nursing System: it refers to the situation where the patient is able to be taught by the nurses and develop knowledge on particular skill (Orem, 1991).

Knowledge of Directly Observed Treatment Short Course (DOTS) Knowledge of DOTS is a measure of patients ability to achieve therapeutic self care demands by understanding and accepting to be observed while swallowing tablets by health care giver trained or volunteer until completion of treatment (WHO,1992).

Adherence to treatment: Adherence to prescribed treatment refers to taking the prescribed treatment daily, coinciding with the health advice, until one completes a full course of treatment (Haynes, Taylor & Sackett, 1997).

Significance of the study

The knowledge that was contributed by the study may influence the practice of nursing and enable generation of more studies in medical/surgical related to clients with pulmonary tuberculosis. Knowledge from this study might influence and assist nurses to fulfill their educative role to clients.

In providing knowledge the clients were empowered to make own decisions and improved capabilities for self care hence meeting requirements of prescribed treatment. The study would therefore contribute in the generation of new nursing body knowledge to the already existing body of knowledge.

It has also hoped that the City Health and the Ministry might use the results of this study through the national tuberculosis programme in the use of DOTS to measure adherence.

CHAPTER 2

LITERATURE REVIEW

Introduction

Polit and Hungler (1991), assert that the review of literature is essential in discerning what is already known about the topic under study. According to Burns and Grove (1993), reviewing relevant literature about the phenomena under study is done to generate a picture of what is known and not known about a particular situation. Researchers do not conduct their studies in a vacuum but need literature to be reviewed widely in order to have a broader overview about the study and to gain knowledge or a full picture of what is ought to be (Polit & Hungler, 1995). The critical analysis of previous studies and published literature will focus on knowledge and self care practices in relation to therapeutic treatment of tuberculosis.

In (1993), the World Health Organization (WHO) declared tuberculosis as a 'global emergency'. It is estimated that nearly 90 million new case of tuberculosis and 30 million deaths could occur between 1990 and 1999; that mortality rate will be more in adults than in any other communicable disease. It may be the largest cause of death in developing countries. In many cases some clients are not given possession of the drugs but must appear at the clinic for drug supply using the DOTs strategy. When they are handed the requisite tables by the provider who then literally watches as the client swallows the medicine. It is said to be an authoritarian approach which makes a certain kind of sense in, for example, prison setting in which clients lack autonomy. This may have different kinds of implications when applied to regular outpatients even in Zimbabwe or any country (WHO, 2003).

In 1995, World health Organization recommended Directly Observed Treatment Short-Course (DOTS) an international strategy for tuberculosis control. One of the main elements of DOTS involved the use of the standard courses for therapeutic treatment, with the recommendations that trained observers watch clients take their treatment as prescribed. This step should prevent client from failing to complete their course of treatment.

The World Health Organization (2005) has set a target level of 85% for treatment success. Defaulting or failing to take the treatment has been a major threat to stop TB strategy and TB programme. This increased the risk of drug resistance, relapse and prolonged infection. Zimbabwe adopted the WHO strategy in 1995. National TB programme is integrated into the general health program. Once the diagnosis is established the clients receive their medication and health education as an essential component is given to clients as individuals including information on side effects, transmission, prevention, and spread of infection, duration of treatment and the importance of completing treatment despite the long period.

Therefore this chapter focused on the dependent variable, self care practice non adherence; the independent variable which was knowledge on tuberculosis the relationship between knowledge about tuberculosis treatment, self care practices non adherence and the theoretical framework.

Self care practices on tuberculosis treatment (dependent variable)

Adherence to therapies is a primary determinant of treatment success. Poor adherence attenuates optimum clinical benefits and therefore reduces the overall effectiveness of health systems. That is, medicines will not be effective if the clients do

not follow prescribed treatment. In developing countries only 50%of clients who suffer from chronic disease adhere to treatment. In some developing countries, a number of studies have been conducted to determine how widespread the problem of not following instructions on prescribed treatment such as in America 51% of patients treated for hypertension adhere to prescribed treatment. In Australia in the treatment of HIV/AIDS, adherence of retro-viral agents varies between 37% to 83% depending on the dug under study and the demographic characteristics of client populations (WHO, 2003).

Farmer (1997) finds adherence to be a problematic concept because it implies docility to providers (Morisky, 1990). Sumartojo (1993) (Portes & Grand, 1999) postulates the clients are equally able to comply with anti-tuberculosis therapies (Porter and Grange, 1999).

Upleka and Rangan (1995) suggest that while DOTS strategy has been found to be effective in improving client adherence to anti-tuberculosis treatment. In some settings it was its useful and sustainable in resource poor settings where tuberculosis is endemic such as India may be limited. One defaulting client interviewed 9 months after discharge asked whether he had continued his tuberculosis treatment until the end. He reported problems of high transport costs to and from clinic, compounded by poor or lack of drug supply despite several visits to the health care facility. These faults included poor planning and supervision at the health care center.

In some countries like United States of America, a wide range of incentives for clients and providers have been successfully used to encourage treatment completion. In Sierra Leone, patients who had paid deposits at the beginning of treatment had their cash reimbursed to them at the end of in-patient phase to promote adherence (Solomon and

Salomao, 1994). Tuberculosis is associated with stigma as tuberculosis is being labeled as incurable. In cases client and families are shocked when diagnosis of tuberculosis has been made and disclosed. They are unable to accept it, (Uplekar & Rangan, 1996).

Tusky, Hahn et al (2004) describe problems such as homeless, alcohol and drugs as reasons reported for poor adherence to TB treatment as self care practices. In California some studies were undertaken and in some places it was noted that males were more significantly higher in completing prescribed anti-tuberculosis treatment

Several studies have shown that generally clients with tuberculosis have a problem on adherence to anti-tuberculosis treatment. In Zimbabwe, the Matabeleland North provincial districts report on tuberculosis (2002) indicated a generally unacceptable defaulter rate more than other districts of Matabeleland North province. The prevalence of non-adherence to anti-tuberculosis drugs ranged from 14% to 54% between 1992 and 2001. This is compared with the amount from the World Health Organization which recommends a non adherence rate of 10% and below (Pablos-Manderz, Kniish, Barr & Luner, 1997).

Manders et al, (2000) reported results of a study conducted in a rural district in Malawi in which guardians supervise tuberculosis treatment. This was compared with hospital/health center based DOTS. The results showed that 4% in the guardian supervised DOTS strategy. The non adherence measures included monitoring forms/cards, counting of tablets and checking on the urine. In a study in a rural district in South Africa, Edginton (1997) reported an overall non adherence rate of up to 25% in a two year comparative study of clinic based DOTS strategy. The outcomes on non-adherence were measured by recording every clinic and hospital visit of every client. The

study revealed focus on self reports by tuberculosis clients in terms of taking anti-tuberculosis drugs in addition to records of clinic visits.

A study was conducted to measure the rate of compliance among 321 patients with chronic diseases such as diabetes mellitus and hypertension who attended the clinic of the Ministry of Health in northern Palestine. The results showed that there was 6.5% non-compliance, 52,4% poor/partial compliance and 42.1% good compliance among the tested sample, studied sample. The percentage of non-compliance correlated with the percentage of literacy and lack of drug and disease knowledge among the tested sample. It was noted that pill count method was also used to assess compliance in medical drug trials by measuring the difference between the number of doses initially dispensed and the number remaining in the container.

A number of factors have been reported to contribute to non adherence to anti-tuberculosis treatment. In a study conducted in India, Santha et al (2000) reported that higher rates of defaulters were associated with irregular treatment, history of previous drinking alcohol and being males. A study by Al-Hajjaj and Al-Khatim (2000) reveals that males lack of knowledge and unemployment were characteristics among others that lead to non adherence to treatment among tuberculosis patients.

Pulmonary tuberculosis is a disease that affects the quality of life. Therefore, self care seeking behavior among the tuberculosis patients varies. Yimer, Bjume and Alene (2005) reported that clients in Ethiopia had a median health seeking period of 15 days. The delay was strongly associated to non formal health providers and self care treatment. Upleka and Rangan (1996) reported that at least 60% of patients with pulmonary tuberculosis sought treatment in private clinic and India.

Sbarbaro (2004) noted that there are advantages that are associated in adopting DOTS strategy. These are completion of treatment and early identification of side effects (Frieden, 2004). In a study conducted by Harare City Health Department in 1994 on defaulters, a cross-section study design was used in which 165 clients had defaulted. The peak defaulter's period was 23 weeks. The information was obtained from the case notes. No information on why clients defaulted was available. The results showed that 36% of defaulter's period was 8 weeks, (Mungofa et. al. 2001).

The Implementation of Directly Observed Treatment Short-Course (DOTS) was adopted to improve self care practices of adherence to treatment of tuberculosis. In a study worldwide to assess its effectiveness different views were identified as contributory factors toward treatment completion. The problems identified were geographical accessibility where health centers were reported to be far from clients homes, cost of commuting to and from the health centre, opening times at the health center were unsuitable for some clients as times clashed with working times and stigma as a social factor among others were identified (Macq, Theobold, 2003).

In Tarai district of northern Nepal, a study was conducted in 1998 in order to identify potential methods of increasing adherence to tuberculosis treatment. The results showed that these clients who did not adhere to treatment reported that they had to travel long distance to health center, fewer clients reported that they were informed about consequences of not completing treatment. This showed that some clients were not informed (Walws & Singh, 2003).

Tuberculosis mostly affects the poorest people in the world (Knight, 2000), ninety-five percent of the new tuberculosis cases every year are in the developing

countries. The illness tumbles them further into poverty, tuberculosis affects all predicted quality of life. These included general health perception, somatic sensation, psychological health spiritual well being, physical, social and role functioning (Hansel, Wa, Chang & Diette, 2004). Other detailed problems include social stigma, isolation, pile burden, long duration of therapy, sexual dysfunction, loss of income and fear.

Lu-Ali (2000) reported that 70.2% of the pulmonary tuberculosis subjects had a moderate level of self-care and 27.7% had a high level of self-care. The study did not highlight the specific self-care practices by PTB clients. Dots infringed upon the clients autonomy to be responsible for their own care. Therefore promotion of Dots implies that adherence without supervision of a second person.

Independent variable knowledge on treatment of pulmonary tuberculosis

When knowledge is acquired the client is empowered to make informed decisions hence leads to accurate and complete treatment. Dzuda (1996), states that 62% of the clients on anti-tuberculosis treatment do not follow given instructions to achieve complete cure. In another study, it was found out that some family members encouraged and supervised the clients on anti-tuberculosis treatment to enhance completion of treatment (Marumam, 1996).

In a study conducted in Tanzania in the city of Mwanza to asseess the level of knowledge of disease and treatment among clients with tuberculosis only 30% of the participants had satisfactory answers to knowledge of disease and treatment. According to National Guidelines on tuberculosis management and control, every TB client must be given heath education on the symptoms and signs of the disease, transmission of TB, cure if the disease, duration of treatment of the disease, medications and their side effects.

This education is provided by health workers to individual clients and in groups (Ministry of Health, Tanzania 1995)

In a study conducted in Gambia to explore gender differences in health seeking behaviors, access to treatment and knowledge about tuberculosis in 2002, clients on TB were interviewed between age 15-59 of both genders. The results revealed that women visited traditional healers more than men. This was thought probably could be due to lack of time to visit health care or issues of increased confidentiality at the traditional healer. Lack of knowledge about tuberculosis and stigma were also reasons cited (Eastwood & Hill, 2004).

In Zimbabwe the national TB manual reported that DOTS strategy was not known by client's family members due to lack of knowledge and hampered the goal of curing tuberculosis. A good nurse client relationship enables the client to understand health education given on tuberculosis treatment. Ndudzo (1996) states that there is a strong relationship between adherence and cure of patients.

In a study conducted in Italy in illegal immigrants on anti-tuberculosis treatment, 41% completed treatment after 6 months. The author concluded that the cure rate was low as the standard set by WHO DOTS strategy is 85%.

Ait-khaled et al (2003) described age distribution of tuberculosis internationally. In the countries with high population growth rate it was reported that the tuberculosis affects many young, economically active adults, and this has huge economic, social and familial repercussions. This age group is corresponding to the period of sexual activity is mostly exposed to the risk of HIV infection which explains the rise in the numbers of tuberculosis cases in certain high TB prevalence countries heavily affected by HIV

epidemic of which Zimbabwe is included. This therefore justifies the age group identified for this study. Communication with the client through health education is an on-going process that allows health staff to inform clients about their illness and its treatment and to respond to any questions that might be asked by clients and their families (Ait-khaled, 2003). This creates a good rapport with the client.

In a report in United Sates of America, multi-drug resistant tuberculosis is reported to be prevalent among foreign born persons who accounted for 81.6% of MDR TB cases in 2007. An investigation was conducted in Chuuk in Micronesia federal State to investigate the reported cases of multi-drug resistance tuberculosis disease of two clusters. The results showed that these outbreaks were caused by the inability to follow TB practices or to provide appropriate drugs. These findings also highlighted the vulnerability of pediatric contact and the challenges of diagnostic and treating MDR TB in resource limited settings.

In 2008 an estimated 500 00 people worldwide developed MDR TB largely as a result of inadequate TB control activities which include treatment. The challenge of primary treatment is likely to be worsened by the increase in numbers due to migration and displacement of various populations. MMWR (2009 March 20) (Morbidity and Mortality Week report).

In another study of patients with Arthritis it was found that patients listed that medical advice must be integrated into their belief in order to understand about disorder they experience in their everyday lives. Most clients expressed desire for more information about their condition and its treatment. Empowerment and activity participation are important. Sharing therapeutic information and knowledge building

between clients and health worker promotes relationship, promoting balance of power between them (Porter and Gangler, 1999).

In Tanzania Wandwalo and Morkuo (2000) reported that 2% of their subjects believed that tuberculosis is permanent 16% were sure of the durability of tuberculosis. These beliefs were reported that they resulted in poor adherence and disruption of medication among pulmonary tuberculosis clients. Patients should know the nature of their disease and its treatment (Dzuda, 1994). Cahill (1996) indicated that because of consumer knowledge, the client should know the concept of implementation. In some studies in Thailand and India, they reported that some respondents interrupted treatment when they felt better and around one or two months after initiating chemotherapy, (Akkslip, 1999) and (Somrat, 2005) Kaona, Tuba Siziya and Sikaona, 2004).

Relationship between knowledge and self-care variables

In a worldwide study in which 134 countries were involved assessing trends of tuberculosis incidence. A comparative study results showed that National TB control programme plays a vital role in curing TB patients and preventing deaths through early diagnosis and treatment of active tuberculosis. This significantly reduced transmission and incidence. However it was noted that in some instances clients were not diagnosed and treated enough to prevent transmission, case detection and cure cannot be measured properly. This shows that it is a challenge for any country to have a major effect on TB transmission and incidence worldwide (WHO Bulletin, 2009 September).

It has been reported in Ghana that the combination of TB and HIV has seen some high mortality and morbidity rates. Despite the clear benefits of the DOTS strategy in

some countries, rigid supervision of treatment may also increase the stigma associated with the disease as it implies distrust of the client (Pronk, Porter, 2000).

The failure to take medication as prescribed is universal and perplexing like in epilepsy, leprosy, rheumatic heart diseases let alone pulmonary tuberculosis. Some studies have shown that out of three, one patient will prematurely stop treatment prescribed (WHO 2004). Defaulter's rate has been documented among pulmonary tuberculosis clients rate as high as 65% as compared with clients suffering from hypertension, arthritis, cardiac failure and diabetes mellitus. It was sighted that the belief that symptoms disappearance encourages the clients to stop hence the rate of defaulter increases. Default of prescribed tuberculosis treatment usually associated with severe illness, functional impairment and high mortality rate (WHO, 2004). Therefore intensive educative efforts and reliance on even close family members such as mothers to ensure the ingestion of medication have proved not to be effective. (Frieden, 2004).

Lu-Aili (2000) reported that 70,2 % of clients with pulmonary tuberculosis had a moderate level of self care but did not specify specific practices undertaken. In a study on the myths and stigma among the Indian community about tuberculosis, the clients with tuberculosis were reported to often hide their symptoms fail to take the prescribed treatment or seek treatment early. The reasons described were that of lack of knowledge about the disease and fear of being ostracized. A traditional belief such as that tuberculosis is incurable, some say it causes impotence or is sexually transmitted. This shows that poor adherence is due to lack of information or are misinformed sigh, (Bamo, et al 2000).

Stigma was reported to also affect woman in taking treatment more than men as their marital lives will be at stake either they are sent to their homes or are abused to physical and sexually. Knowledge plays a big role in dispelling myths and misconceptions about tuberculosis disease mode of spread, treatment and control. WHO (2000), states that women account for a disproportionate 70% of the worlds poor, they are particularly disadvantaged. In a statement at the Commemoration of World TB Day in 2002's STOP TB Fight Poverty theme-expanding DOTS it was noted that increases in DOTS awareness and providing greater access to treatment was of great need despite that these require financial Aid. It also emphasized on the need to raising awareness, mobilizing tuberculosis sufferers to demand greater access to treatment (Abed, 2002).

Tuberculosis is perceived by others as incurable disease. Due to fear clients fear taking their treatment. Some social factors identified such as stigmatization, population displacement and mobility affect tuberculosis treatment. In a study in Ethiopia, Shargie identified factors related to physical access to health care centers such as long distance from home, cost of public transport and lack of resources to access treatment (Kamorantakul, 1999).

Eastwood et al (2009) in a study concluded in Australia on knowledge about pandemic influenza and compliance with containment measures the results showed that people with a basic knowledge level are more likely to comply with public health required measures than those without knowledge. This is why this researcher embarked on this study to determine the relationship between knowledge and self care practices among adult tuberculosis clients.

Tuberculosis in Zimbabwe was ranked 10th in 2003 as a public health problem and 5th condition causing hospital morbidity and mortality among people living with HIV and AIDS (MOW&CW 2004 Zimbabwe). Tuberculosis is one of the biggest challenges facing the Harare City Health Department. In 2004 new cases increased from 2.99% in 2002 to 9,3% in 2003 (MOH&CW, 2004).

The involvement of clients relatives especially wife or husband may provide the necessary social support to continue therapy. The combination of negative social attitude and little or no knowledge of disease its signs, symptoms treatment and prevention posses a difficult challenge to health workers (Dzuda, 1994). In a study by Marumani (1996) the findings stated that people with chronic illness relied on their judgment and wisdom to manage their illness.

Dependence affects the role in relation to family work and ability to purchase resources (Roper, Logan and Tierney, 1996). This was concurred with Moyo (2003) findings that home based care can decongest the hospital by permitting a more appropriate implementation of plan at home. This is why Dots is implemented while clients are coming from home which is a better approach than when clients were being nursed in sanatorium.

In the study by Wilson, Scamagus and Germa (2002) the result showed that 10% of the asthmatic respondents were smokers while the rest were not. Tusky and Hahn (2004) described to tuberculosis treatment as self-care practices. Non adherence has been found to be related to low socio economic status, transportation issues, being a child, or a single parent, seriousness of the illness, ethnicity and insurance issues (Clinical guidelines, 2002).

The involvement of patients relatives especially wife or husband may provide the necessary social support to continue therapy. The combination of negative social attitudes and little or no knowledge of diseases it signs, symptoms treatment and prevention poses a difficult challenge to health workers (Dzuda, 1994).

In a study by Marumani, (1996) the finding stated that people with chronic illness relied on their judgment and wisdom to manage their illness. Pulmonary tuberculosis infection affects all age groups predicted quality of life dominance (Hansel, Chang and Diette, 2004).

Rising poverty levels, poor environments and the HIV virus have contributed to the resurgence of TB, which thrives on immune systems weakened by chronic infections and by malnutrition. It is currently estimated that the number of TB cases increased by five-fold in the last 15 years, from 9.132 cases in 1990 to 20831 cases in 1995, and 51 918 cases in 2000. The incidence of TB increased from 121 cases per 100000 in 2000. The national target is to return to 121 cases per 100000 people by 2015. To control tuberculosis, the challenge is to expand and increase the directly Observed Treatment Short Course (DOTS) coverage as well as combating the HIV and AIDS epidermic, (Zimbabwe Millennium Development Goals, Progress report, 2004).

Theoretical Framework

A theory consists of an integrated set of defined concepts, existence statements, and relational statements that represents a view of phenomena and can be used to describe, explain, predict and or control that phenomenon (Burns and Grove, 1993). A framework is an abstract logical structure of meaning that guides the development of the

study and enables the researcher to link the findings of nursling's body of knowledge (Burns and Grove, 1993).

Therefore a theoretical framework provides a context for examining the problem. It is a distinct frame of reference and provides a unique focus that has a profound influence on our perceptions (Fawcett, 1995). A theoretical framework serves as a guide by providing a systematic identification of relationship between variables. (Skinner, Hampson 2001). States that the theoretical framework assumes there are relationships between variables and for this study it is the relationship between knowledge, the independent variable and self care practice which is the dependent variable. Self care is broadly defined as the procedure of actions directed to self or environment to regulate human structure, function and integrity. Agency is defined as the product of these deliberations.

Orem's self care theory of nursing was used in some studies primarily on the development of instruments. The measurement of exercise of self care agency by Kearney and Fleischer (1979). An instrument developed by Denyes (1981) was to measure self care agency adolescents. This model has been applied in some studies on broader basis. Back Shaders (1974) reported a study of diabetic management. Bromly's (1980) use of model in eutero stomal therapy, Dadds (1984)) study of informational intervention on self care to prevent side effects. Chang et al (1985) reported on adherence to health care regimes among elderly women. Galli (1984) reported on promoting self care in clients with hypertension through client education, and Fitzgerald (1980) found the model an effective guide in designing an educational program. (Fitzpatrick, Whall, 1989). In these studies the aim was to give knowledge to clients through education so that

they can perform self care activities to meet their needs, that is, self care being adhering to their treatment. Therefore self care framework focuses on the person's ability to perform self care (Orem, 1991). Self care is regarded as a goal oriented activity that is learned. Therefore the ability to acquire knowledge about self care is very important.

Orem (1991) states that nurses go to where patients are in their homes, hospitals or other resident care institutions or patients may come to the clinic or the home to receive their treatment or other type of facility where nurses are to provide nursing. (Fawcett, 1989). This is also applicable in this study when clients receive their treatment for pulmonary tuberculosis. In this study the participants were adults attending Beatrice Road Infectious Disease Hospital Outpatient Clinic to receive their treatment for pulmonary tuberculosis. The clients were informed about the study and if consented were required to answer a structured questionnaire. Interview schedule was in three parts for the clients to respond. The results were analyzed.

The nursing supportive-educative nursing system is the conditioning factor which influences the self care practices and the results when the client has acquired knowledge. The capabilities of the client will enable the client to be able to make decisions on completion of prescribes treatment for pulmonary tuberculosis. This is supported by Agarwal (1993) who stated that adequate support education and supervision given to clients increases knowledge on the effectiveness of treatment of pulmonary tuberculosis. From this selected review, it is apparent that Orem holds much appeal to nursing and is viewed as readily applicable to wide range of clinical settings and clinical problems like adherence to prescribed treatment by adults with pulmonary tuberculosis.

Summary

Literature review is a critical overview of the research topic of interest. The review of literature seems to indicate that knowledge on the prescribed treatment of tuberculosis is vital in order to meet self care by the client. This is important in order to address the problem of non adherence internationally, regionally and locally.

In Zimbabwe in a study in Matabeleland, Nkayi district reported 14% to 54% rate of adherence to tuberculosis treatment from 1992 to 2001. This was a study in which all districts demonstrated their performance in as drug resistance was concerned. Regionally and internationally non adherence to tuberculosis treatment varies but in countries like India a lot of effort has to be made in order to address this issue due to a variety of factors. World wide various factors have been cited and these include; lack of family support, lack of knowledge on the clients presence of co-existing infections, HIV/AIDS status, poverty, long distance from area of residence to health facility and cultural belief (Santha et al, 2000).

Medical surgical nurses in Zimbabwe are channeled as change agents and advocates for patients. They need to come up with various strategies which will promote clients to be empowered and promote prescribed treatment.

The literature reviewed revealed numerous researches that have adopted Orem's self care theory of nursing. In developing countries researches that have used Orem to determine relationship between knowledge and self care practices on tuberculosis treatment are still few. It is against this background that the investigator wished to conduct a study in this area. It is hoped that the results from the study would fill in the

gaps in the knowledge of self care among clients who need treatment on pulmonary tuberculosis.

CHAPTER 3

METHODS

The chapter presents the research methods used for the study. The methodology gives a study its scientific merit or degree to which a study possesses therapeutic relevance, internal and external validity (Polit & Hungler, 1995; Burns & Grove, 1993). This chapter presented the research design, the sampling plan, sampling size; sampling procedures variables conceptual and operational definitions instrument demographic variables, pilot study data collection procedure/ plan human rights consideration and data analysis.

The Design

A scientific method incorporates all procedures that the scientists have used or may use in the future to pursue knowledge. The research method is based on the philosophy of logical empiricism (Burns & Grove, 1993). The quantitative non-experimental, descriptive correlational study design was employed in this study. A quantitative research method is a formal, objective systematic process in which numerical data are obtained to obtain information about the world (Burns & Grove, 1993). This study design was used because it was found to be the most appropriate and mostly used in nursing studies. Furthermore, the aim of the descriptive correlational non-experimental study design is to examine the relationship that existed between the two variables and to determine the degree and type of relationship rather that to infer the cause and effect-relationship (Burns & Grove, 1993), without the investigator manipulating the independent variables nor is the setting controlled.

The purpose of the study was to examine the relationship between self-care practices and knowledge among the clients aged 20-40 years with pulmonary tuberculosis attending Beatrice Road Infectious Disease Hospital Out-patient Clinic in Harare. The hospital is situated in Mbare suburb. In 2003 notification rate was 1 039 per 100 000, (Aids and TB programme annual report 2004). Daily attendance ranges from 20-30 patients coming for continuation phase treatment bringing a total of 100-150 clients per week.

Sampling Plan

A sampling is a process of obtaining a sample for the study, (Polit & Hungler, 1995). The process involves selecting the population for study or other elements with which to conduct a study (Burns & Grove, 1993). The sampling plan is developed to increase representativeness, decrease systematic bias and decrease the sampling error (Burns & Grove, 1993).

A sample is a sub-set of the population selected to participate in the study. A sample is a portion of the population that represents the entire population. Polit and Hungler, (1999), state that it is more advantageous to use a sample because it is more practical and less costly than collecting data from the whole target population.

The population is the entire aggregation of the subjects that meet the designated set of criteria (Polit & Hungler, 1995). The population is also called the target population and is that to which generalizations will be made. In this study, the target population consisted of clients aged 20-40 years who had been on intensive phase of tuberculosis treatment using the Directly Observed Treatment Short-Course (DOTS) attending Beatrice Road Infectious Disease Hospital out-patient clinic in Harare. The Out-patient

Clinic reviewed approximately 20-30 clients a day that was an average of 100-150 clients a week who had completed intensive phase of tuberculosis treatment. The clients were returning for the continuation phase.

The Inclusion Criteria

The inclusive criteria included essential characteristics of the target population so as to achieve homogeneity. Control of extraneous variables, provide a guideline for the sample recruitment and enables replication of the study (Burns & Grove, 1993). The inclusive criteria was used by the researchers as basis for deciding whether an individual or object would or would not be classified as a member of the population in question h(Brink, 1996). The inclusive criteria also helped the investigation in this study to identify the population that was clients males and females aged 20-40 years who were attending pulmonary tuberculosis clinic at Beatrice Road Infectious Disease Hospital in Mbare suburb. The subjects were clients who had positive sputum for mycobacterium tuberculosis who had been on intensive phase of treatment using the DOTS strategy. These subjects were coming for review in order to commence the continuation phase. The clients are referred from various clinics, other hospitals and private practitioners. The clients were communicating either in Shona or English.

The Exclusion Criteria

The study excluded the seriously ill who needed hospitalisation, those with extrapulmonary tuberculosis, less than 20 year olds and those above 40 years olds and the newly diagnosed tuberculosis clients. The elderly would have more problems with vision, memory or might have more chronic conditions than the chosen group. The extraneous variables were identified and controlled so that they would not influence the

dependent variable which was self-care practices to therapeutic tuberculosis. Clients who would be attending medical examinations and counseling sessions were excluded as well as those who failed to give consent for the study.

Sample Size

A number of factors determined the sample size. These are the power, effect size, the significance level of the statistic used as well as the potential attrition rate (Burns and Grove, 1993; Polit and Hungler, 1995). Therefore the larger the sample, the smaller the sampling error and also the more representativeness (Uys & Basson, Polit & Hungler, 1995; Burns & Grove, 1993).

Power

Power is the study's ability to detect the smallest difference in the relationship and controls of the likelihood of making type II error (Polit and Hungler, 1995), which meant rejecting null hypothesis when it was false. Power analysis represents a method of reducing the risk of type II error which wrongly accepts a false null hypothesis. In this study the power of 80 which was the minimum acceptable power was used. This power will result in 20% chance of a type II error in which the study fails to detect the existing differences (Burns and Grove, 1993). Therefore it was then now important to identify the effect size.

Effect Size

Effect size is referred to the magnitude or extent to which the null hypothesis is false. It is also referred to the magnitude of differences among the variables. It is concerned with the strength of the relationship among research variables (Polit and Hungler, 1995). The effect size must be identified in order to perform a power analysis

(Burns and grove, 1995), for the purpose of determining sample size. If the effect size is large approximately .8 a small sample size required which is about 25 using the power of "8. Effect size ranges from .2 (small), .5 (medium) and .8 (large). The effect size of .5 is mostly and frequently used in nursing studies (Burns and Grove, 1993). Therefore for this study an effect size of .5 was used.

The significance level controls the probability of making a type I error which is rejecting a true null hypothesis (Polit & Hungler, 1995). Level of significance was used on an index of the probability that the findings were reliable. The more stringent the significant level, for example, 0.01 the greater the necessary sample size (Burns and Grove, 1993). Two commonly used levels are 0.05 and 0.01 with the minimum accepted level of 0.05 which were used in this study. This indicates that only 5 times out of 100 will be undesired and that 95 out of 100 the results will be reliable (Polit and Hungler, 1999).

Sample size is a subset of population (Burns and Grove, 1993) or group that is focus of the study. A sample size is the number of subjects needed for the study (Polit & Hungler, 1999). Brink (1996), states that the scientific programmatic factors influencing the sample size must be considered when deciding on the number of subjects to be included in the study. Polit and Hungler, (1999) states that the larger the sample the more representation of the population is likely and the smaller the sampling error. Sample size depends on the degree of the variability of the phenomenon, the number of variables, type of the study and sensitivity of the instrument to be used also to determine the sample size by performing a power analysis. Therefore for this study the sample size was determined

by using the effect size of .5, significance level of 0.05 and the power of .80 using the Lipsey (1990) power tables.

According to Burns and Grove (1993), the sample size needs to be larger than the calculated size. In this study the calculated size was 63. Therefore there was need to add fifteen to twenty more subjects. In this study 17 clients were added to cover for possible attrition rate. In this study a total of 80 subjects were recruited for the sample size. The sample size was compatible with the statistics which were used namely the Pearson Correlation Coefficient.

Sampling Procedure

Sampling procedure describes the strategies used to obtain a sample for a study, (Burns and Grove, 1993). In this study the probability sampling method was used. Probability sampling is a method where by every element of the population has an equal chance of being selected and that will ensure some degree of precision in correctly estimating the population parameters (Burns and Grove, 1993). Random sampling method was used in this study. Probability sampling controls systematic bias, increases the representativeness of the accessible population and validity of the study.

There are two infectious disease hospitals in Harare where all tuberculosis clients are referred to from clinics, hospitals and private practitioners for management of tuberculosis. To identify the study centre the investigator initially assigned numbers namely 1, 2 and placed them in a tin each number represented the name of the referral hospital. Beatrice Road Infectious Disease Hospital was picked as a study centre as identified 2. The investigator sought the permission to conduct the study at the center

from the City Health Department authority and the matron in charge of out-patient clinic where the study was conducted.

At the out-patient clinic the simple random sampling method was used and to select subjects for the study among the population with pulmonary tuberculosis. Hart (1995), used random sampling in her study of pregnant women with Orem's self-care theory as a framework. An adequate number of participants was determined based on power analysis described by Cohen (1988) and Burns and Grove, 1993). Using the inclusion and exclusion criteria the prospective subjects were identified. All the surnames, first names, addresses and ages were recorded and each one given a corresponding number written on small pieces of paper. The pieces of paper with numbers only were placed in a box, shaken then the investigator picked a number, then the individual subject with the number that would have been picked was a subject for the study. That process was continued till the sample size desired was reached. The numbers were cross-checked with the list made by the researcher. The process was repeated each day and that gave chance for all to be included in the sample. The clinic opened daily from Monday 0800 hours to 1300hours and in the afternoon from 1400hours-1600hours.

The interviews were conducted on those subjects that had given consent. Privacy and confidentiality were maintained. Those subjects that were not picked were informed of the process and were thanked for being part of the sampling frame. Schami (1994), suggests those factors that influence subjects' decision to participation includes self-protectiveness, a high need of personal control, time and travel constrains and the nature of the informed consent (Burns and Grove, 1993). Therefore the researcher's approach towards the subjects need to be pleasant non-cohesive and considerate.

Variables

Variables are described as qualities properties or characteristics of person's things or situations that change or vary and are manipulated or measured in research (Burns and Grove, 1993). Variables are concepts of various levels of abstractions that are concisely defined to facilitate their measurement or manipulation within a study (Kapplan 1964; Moody, 1990).

A dependent variable was a response or an outcome that the investigator, predicts or explains. In the quantitative approach, changes in the dependent variables are presumed to be caused by independent variable (Burns and Grove, 1993). The dependent variable in this study was the self-care practice and the independent variable was the knowledge among clients on tuberculosis treatment. The study seeks to examine the relationship between the two variables. Demographic information was obtained from subjects to describe their characteristics such as age, gender, place of residence, employment status and level of education to mention a few.

Conceptual and Operational Definitions

A conceptual definition provides a variable with a theoretical meaning while an operational definition, will give us terms of the operation or procedure by which the variable or concept is going to be measured in a particular study (Burns & Grove, 1993; and Pilot & Hungler, 1995).

Dependent variable-Self-care practices

This is defined as the ability to take tuberculosis medications as prescribed. This measures the adherence to prescribed therapeutic treatment. The questionnaire was designed which included information on tuberculosis treatment behaviors toward the

prescribed treatment. The Directly Observed Treatment Short Course therapy or strategy promoted the rate of adherence to tuberculosis treatment. The investigator checked on the clients treatment card to verify the accuracy of the responses, for example, one question asked, ”How often do the client keep scheduled appointments to collect drugs?” This was operationalised using structured questionnaire.

Independent variable is knowledge.

Knowledge means facts, skills and understanding that one has gained through learning or experience. Knowledge is conceptualized as acts that influence positive behavior change toward achieving a goal. Operationally, knowledge is the level of understanding that the clients displays when taking tuberculosis treatment in order to be able to achieve self-care. When clients were commenced on any treatment, health education information was given. This included definition of the disease, signs and symptoms, prevention treatment and side effects and what action to take if any appear and also the importance of drug continuity till the course was complete. Knowledge empowered the client to act responsibly.

The independent variable is the variable that can be manipulated by the investigator or which influences another variable (Uys and Barson, 1985). This was done using the structured interview questionnaire.

Demographic Variables

Demographic variables are characteristics or attributes of subjects that are collected to describe the sample. In this study these included age, sex, level of education, employment status, place of residence, income per month, religion, and marital status. This was operationally defined by the Demographic questionnaire.

Instruments

An instrument was a device used by the investigator to obtain data and answer the research questions. The instrument can be a questionnaire, structured interview questionnaire or observation schedule or self report (Polit and Hungler, 1995). In this study data was collected using a structured interview schedule. The interview schedule was developed by the investigator after considering the characteristics of the sample relevant to the study. An interview was conducted using a structured questionnaire to gather information from the clients.

The instrument consists of three sections; the demographic questionnaire Section A, Self-care practices Section B and knowledge Section C. All these are displayed in appendices.

Self-Care Practices Questionnaire (SCPQ)- Dependent variable

The dependent variable self-care practice of the pulmonary tuberculosis client. A face to face interview was conducted using a structured questionnaire to capture data on the subjects concerning their self-care practices. In the questionnaire the subjects were to choose responses according to the answer towards their action on the tuberculosis treatment. The Likert scale was used to measure the self-care practices on the questions. Questions had responses which were scored on a Likert scale ranging from 0-2. This section has 15 questions

The items were narrated as follows: See appendix B. Total score 51. Whether they were always successful in taking correct classes of drugs, whether one is able to keep scheduled appointment to collect drugs, whether always took their drugs at once, whether they always swallowed their drugs under supervision, Whether they had ever stopped

taking their drugs, whether they always had an adequate diet. These 6 items key was 1=never, 2-sometimes, 3= always, these 6 items score were never=0, sometimes=1, always=2. Item 18 had 8 parts with the as follows Disagree=0; Agree=1 Strongly agree =2.The items focused on what the respondents thought about the way DOTS was conducted at the clinic. Attended to early, friendly health workers shortage of staff long queues drugs available at all times having separate clinic or stigma whether they were educated about DOTS strategy. Item 19 had 7 parts. Key was 0=never, 1=sometimes, 2=always. The item focused on what factors affected one's ability to take tablets using DOTS method where never=0, sometimes=1, always=2, Focused on length of treatment period, number of tablets taken at once, having to travel frequently to collect drugs, Being observed like children demotivating, stigma- Everyone has to know that one had TB. waited for long hours before being attended to, felt too sick. Items 20 through to 22 had two columns, Yes=1 No=0. Item 20 focused on whether the respondents took their drugs at the same time daily. Item 21 focused on whether they took tablets daily. Item 22 focused on whether they always took them at the same time.

Items 23 and 24 Key correct=3, partially correct=2 incorrect=1. These focused on disposal of management as sputum. Scores were correct=2, partially correct=1, incorrect=0. Item 25 had a Yes/No answer Yes=1 No=0.

This item asked whether they always covered their mouths when coughing or sneezing. Item 26 was assessing where the respondents obtained their drugs among the four various points namely Health Centre, Village Health worker, Community Nurse or none of the above. The first three items had a score of 1 each and the last one had a score of zero.

The score 0-zero signified that the client did not know how to carry out self-care practice. The score 1-one showed that the client sometimes did any self-care practices, the score 2 the client always performed self-care practices. The grading was progressive from dependence to total independence with minimum score of zero and maximum of 2.

Knowledge Information Questionnaire (KIQ)- Independent variable

The independent variable was the area that assessed the level of knowledge on therapeutic treatment of tuberculosis using the DOTS strategy. This questionnaire component included the definition, causes, signs and symptoms, reasons for taking tablets, mode of spread, duration of treatment, the importance of DOTS and meaning of DOTS, handling and disposal of sputum.

Knowledge is an Independent Variable. The instrument schedule comprised of 26 items. See Appendix C. Total score = 43.

Item 27 asked the respondents whether one on TB treatment could stop treatment when either one is feeling better and whether one has stopped coughing. Key to these were Yes = 1, No = 2, Don't Know = 3. Scores Yes = 1, No = 0, Don't Know = 0.

Item 28 This also responded in the same manner as above. It asked the respondents whether someone on TB could stop treatment without finishing the course.

Item 29 This item wanted to establish the centre were these respondents obtained information pertaining to their disease and treatment either from the nurse, village health worker, printed media. Each had one point on any of the given answers.

Item 30 through to 42 A, B and C had the following KEY 0 = Incorrect; Partially Correct = 1, Correct = 2; Incorrect Scores = 0; Partially Correct = 1; Correct = 2.

Item 30 asked the respondents what information the respondents were given about TB treatment.

Item 31 focused on how they felt about the effects of prolonged length of treatment. Item 32 asked the definition of tuberculosis and Item 33 asked about the causes of TB. Item 34 signs and symptoms and Item 35 asked how pulmonary TB was spread. Item 36 asked the respondents what action would be taken when the supply of drugs was about to finish. Item 37 and 38 asked about DOTS' meaning and advantages that was whether it ensured taking of prescribed treatment, reduced drug resistance and whether it reduced transmission of disease.

Item 39 asked the respondents when a TB client could stop taking tablets. Item 40 asked what type of a diet should a TB client take. Item 41 focused on prevention of TB spreading whether through avoiding overcrowding, treatment of the infected and whether effect of good ventilation was useful. Item 41 to 45 Yes = 1, No = 0. Item 42 and Item 43 asked whether TB could be cured. Item 44 asked whether TB could be cured even if one was HIV infected. Item 45 asked whether a client with tuberculosis could discontinue treatment if drugs were not available.

Item 46 asked about the commonest side effects about TB drugs that clients had experienced or heard about

The scores were distributed by the option by using correct (3) incorrect (0) and partially incorrect (2). 0 score was given to wrong answer for 12 items. Questions addressing DOTS were rated being observed got 3, then the one who only say taking tablets daily who got 2 then those who say do not know got (0). Some questions had

yes/no column with score as 1 and 0. This section has 14 questions (Section C of Appendix 2).

Demographic Information Questionnaire (DIQ)

This focused on capturing demographic data concerning the age, sex, marital status, level of education, employment status, place of residence, income per month, religion, marital status and distance from nearest clinic as well as habits. This had 11 questions. Descriptive statistics were applied to analyse characteristics. Frequency distribution, the mean, the standard deviation and the percentages were used to summarize the characteristics of the sample.

Relationship between Self-Care Practices and Knowledge on Therapeutic Treatment among Tuberculosis Clients-Demographic variable

In this study, inferential statistics were used by the researcher to make inferences on the study population. The aim was to examine the relationship between self-care practices and knowledge among clients on tuberculosis treatment. The Pearson Correlation Coefficient was used in this study at 0.05 significance level. The type of relationship could be negative and the strength of the relationship was determined by a correlation analysis and expressed mathematically by a correlation coefficient (r) (Burn and Grove, 1993). This is obtained by performing the statistical procedure Pearson's product moment correlation test (Burns and Grove, 1993). Simple linear regression analysis was carried out to confirm the strength and direction of the relationship.

A pilot study was conducted at Beatrice Road Infectious Disease Hospital in order to test the adequacy of the instruments. Ten subjects were interviewed. This assisted in

identifying abnormalities in the instruments and the time it took for the investigator to interview one subject and amendments were made.

Validity and Reliability

Validity is the degree to which an instrument measures what it is suppose to be measuring (Pilot & Hungler, 1995). This was insured by constructing an instrument to scrutinize it. An instrument is reliable if it is consistent in measuring similar valves in the similar values in the same quantities with repeated application. It can be said to be valid when it measures what it is supposed to measure, (Currier, 1990). According to Burns and Grove (1983) reliability focuses on stability, equivalence and homogeneity. The instrument schedule was reviewed with the research, supervisor as well as others and experts at the Research Board of Zimbabwe to validate the contents of the instrument.

The researcher conducted a pilot study to determine the reliability of the instrument. The instrument was tested on the sample (n=10) clients who were not included in the actual study. The pilot study was conducted at the Beatrice Road Infectious Disease Hospital Outpatient Clinic. The aim was to assess the instrument's reliability. Problems identified were corrected before the actual study was commenced. To test the validity and reliability of the instrument a pilot study was carried out to validate the instrument and to determine feasibility of the random sampling. Sample of 10 subjects were chosen in respect of the inclusive and exclusive criteria. Data was collected and assessed for content, coverage and consistency validity was used by. Questionnaire was then modified. The reliability of an instrument is the degree of consistency with which an instrument measures (Burns & Grove, 1993). Therefore the pilot study which is a smaller version of the study was to perfect the questionnaire and enhance reliability

(Pilot & Hungler, 1995). The pilot study was conducted at the same site at Beatrice Road Infectious Disease Hospital.

An instrument is reliable if it is consistent in measuring what is suppose to be measured (Currier, 1990) reported that an instrument is said to be valid when it measures what is supposed to be measured. Constant validity, measures how well an instrument measures the content of a particular trait or body of knowledge (Currier, 1990).

According to Burns and Grove (1983) reliability focuses on stability equivalence and homogeneity. The researcher conducted a Pilot study to examine the reliability of an instrument. The instrument was tested of (N = 80) subjects who were not included in the research. The pilot study was conducted at Beatrice Road Infections Diseases Hospital Outpatient Clinic. This assisted in assessing the questions contained in the interview schedule. It also enabled the investigator to determine the duration of the interview with the subjects. All unnecessary information was removed and modifications were made.

Data Collection Plan

Data collection plan is a systematic gathering of information that is relevant to research objectives or purpose of the study (Burns & Grove, 1993). Data collecting procedures requires two dimension of consistency among subjects and data collectors (Burns & Grove, 1993). Data collection plan details how the study was implemented. Data was collected in the month of April at Beatrice Road Infectious Hospital Out-patient Clinic. Permission was granted after the letter of request was submitted to the Director of Health Service, City of Harare requesting permission to collect information relevant to the study. A face to face interview with each respondent was conducted using a structured questionnaire while in a private room to maintain confidentiality.

Respondents were selected using the inclusive and exclusive criteria. The process took twenty minutes. These respondents were also waiting to be reviewed by their medical specialists. Therefore efforts were made that the clients did not miss that opportunity because of the study.

Consistency was maintained using the structured questionnaire. The privacy helped to prevent distraction with outside environment and promotes sense of trust. Data was coded accurately. The clients responded to all the questions.

Human Rights Consideration

Burns and Grove, (1997) states that every prospective subject has the opportunity to choose whether or not to participate in the research study. Therefore following the approval by the University of Zimbabwe, Department of Nursing Science, the Medical Research Council and City Health authorities' permission was finally granted by the Matron and the medical officer at the study site.

Finally permission was sought from the study respondents. An informed consent was obtained from each potential respondent. Every individual has the right to self-determination in choosing invasion of their privacy by accepting to participate in the study. All procedures including the purpose of the study were explained to the participants. An informed consent included disclosure of essential information disclosure of essential information, comprehension, competency and voluntarism. It was also expressed in such a way that the perspective respondents were able to understand without difficulties (Polit & Hungler, 1995) See Appendix A. The respondent were informed that they would be free to withdraw if they felt so without any penalty. They were requested to put an X on the consent form if they agreed to participate. They were

informed that they would be asked questions about demographic data; knowledge on pulmonary tuberculosis treatment and self-care practices and scores were awarded accordingly. No name appeared but a code number and code book only to protect the anonymity. The respondents were competent enough to make voluntary decision to participate in the study without coercion (Polit & Hungler, 1995).

All the data was locked up in a locked cabinet and the investigator would only access it. After the research study recordings of the study results will be discarded. So after all the explaining and the participants approval to participate and having understood everything would the participant then proceed to sign the consent form.

Data Analysis

Data analysis is the process that is conducted to reduce and give meaning to data (Burns & Grove, 1993). This is a systematic organization and synthesis of research data and the testing hypothesis using those data (Pilot & Hungler, 1999). All the raw data first was entered in a code book. After data is collected the discovery phase of research begins by finding the meaning of the data which is determined through analysis (Burns & Grove, 1993).

Data was first organized then precisely entered into the computer to ensure accuracy of results. A plan for entering data into the computer was developed in a code book. A code book was developed by the investigator. The code book included all the rules that guide coding and all the conventions used in coding data. All the data was entered into the computer for data analysis using the statistical package for social sciences (SPSS, PC). Data cleaning was done to check for any errors before printing.

Self-care practice had 14 items with a total score of 51. Based on these self-care practices the clients that would score above 50% (26.5%) would display poor self-care practice. Therefore only 11 out of 51 scored below 50% good self-care practices and 43 were knowledgeable. On the dependent variable which had total scores of 43, all respondents scored above 50% (21.5). This displayed good knowledge enough to influence self-care.

Summary

This chapter covered the study design sampling plan, sample size, sampling procedure, variables pilot conceptual and operational definitions instruments, reliability and validity. Human right considerations were also be considered.

CHAPTER 4

RESULTS

In this chapter data from the research study was presented, highlighting the major findings. The data was analyzed to answer the research questions on the study the relationship between self-care practices and know among 20 – 46 year old clients on tuberculosis treatment.

Summary

The purpose of this study was to examine the relationship between self-care practices and knowledge regarding tuberculosis treatment among 20 – 40 year old clients attending Beatrice Infections Disease Hospital outpatient clinic in Harare.

The questions answered were:

1. What knowledge do the clients with pulmonary tuberculosis have regarding their tuberculosis treatment?

2. What self-care practices about tuberculosis treatment do the clients with pulmonary tuberculosis possess?

3. What is the relationship between knowledge and self-care practices among clients with pulmonary tuberculosis regarding their tuberculosis treatment.

A sample size of (n = 80) was selected using simple random sampling, the responses rate was (100.0%). Subjects with extra pulmonary tuberculosis, those aged below 20 years and above 40 years and the very ill were excluded from the studies. Data was collected using structured interview schedule in face-to-face with the subjects.

Data was collected during the month of April 2010. The response of the clients was 100%. Analysis was done using the descriptive statistics, which included frequencies, percentages and means, modes, medians. Descriptive statistics were used to describe demographic information, knowledge and self-care practices among the clients and pulmonary tuberculosis treatment.

The second stage of analysis involved establishing the relationship between knowledge and self-care practices among the clients with pulmonary tuberculosis treatment.

Data was collected by means of a structured questionnaire. Interviews were conducted in the outpatient clinic private room and each interview lasted about 20 minutes. The data was analysed using the SPSS version 11 as well as using descriptive statistics frequencies percentage, mean range and standard deviation. Inferential statistics were used to analyse the relationship between the knowledge on tuberculosis treatment and self-care practices to pulmonary tuberculosis treatment Pearson's product correlation coefficient (r) was used to determine the presence or absence of the relationship between level of knowledge on tuberculosis treatment and self-care practices among respondents on treatment (whether linear positive negative or in verse). Simple regression analysis was used to examine the strength of the effect of the level of knowledge of tuberculosis treatment on self-care practice to tuberculosis treatment. Data was presented in the form of tables.

Sample demographics

The demographic section of the questionnaire consisted of 11 questions that addressed the following sex, age, marital status, religion, level of education, employment status, house hold members lived with, monthly income, area of usual residence, and habits namely beer drinking, and smoking.

Table 1.1 shows the results of age, sex, marital status, and religion of the respondents. The sample consisted of 80 pulmonary tuberculosis positive respondents on treatment. In terms of sex 32 (40%) study respondents were males and 48 (60%) were females. Minimum age 22 and maximum age was 40, mean age was 32.8 with a median age of 33 years and a modal age of 36 years. In terms of marital status single were 9 (11.3%) married 46 (57.0%), widowed were 13 (16.3%) and divorced were 12 (15%). The mean was 2.3, median was 2.00, mode of 2. In terms of religion 70 (87.4%) were christians, 1 respondent was moslem and 9 (11.3%) were traditionalists.

Table 1.2 is the continuation of the demographic data in terms of education, employment status, and number of house hold members, family members usually in house hold, income. Table 2 shows on the level of education 2 (2.5%) had reached primary level, 77 (96.2%) reached secondary and 1 (1.3%) had tertiary level.

Table 1.1
Sample Demographic (i)
(N = 80)

Variables	Frequency	Percentage
Sex		
Male	32	40.0
Female	48	60.0
Age		
22	5	6.3
23	2	2.5
24	4	5.0
25	4	5.0
26	2	2.5
27	3	3.7
29	5	6.3
30	3	3.7
31	3	3.7
32	7	8.7
33	4	5.0
34	7	8.7
35	5	6.3
36	8	10.0
37	6	7.5
38	1	1.3
39	4	5.0
40	7	8.7
Marital Status		
Single	9	11.3
Married	46	57.4
Widowed	13	16.3
Divorced	12	15.0
Religion		
Christianity	70	87.4
Moslem	1	1.3
Tradition	9	11.3

Table 1.2
Sample Demographic (ii)
(N = 80)

Variables	Frequency	Percentage
Level of education		
Primary	2	2.5
Secondary	77	96.2
Tertiary	1	1.3
Occupation/Employment Status		
Unemployed	13	16.3
Self-employed	38	47.4
Formally employed	29	36.3
Number of household members		
Alone	5	6.2
Three	29	36.3
Four	39	48.7
Five	3	3.8
Above 5	4	5.0
Income		
Less than USD100	34	42.5
101 – 200 USD	37	46.3
201 – 300 USD	4	5.0
301 – 400 USD	2	2.5
More than 400 USD	3	3.7
Usual area of residence		
Urban high density	61	76.2
Urban middle density	2	2.5
Urban low density	12	15.0
Rural area	4	5.0
Farming	1	1.3
Mining	0	0.0
Beer consumption		
Yes	26	32.5
No	54	67.5
Smoking		
Yes	17	21.3
No	63	78.7

Table 2.1
Self-care Practice (i)
(N = 80)

Variables	Frequency	Percentage
Always successful in taking correct drugs		
Always	80	100.0
Able to keep scheduled appointments to collect drugs		
Always	80	100.0
Do you always take your drugs at once		
Always	80	100.0
Do you always swallow your drugs under supervision		
Never	29	36.3
Sometimes	16	20.0
Always	35	43.7
Have you ever stopped your drugs		
Sometimes	71	88.7
Always	9	11.3
Did you always have an adequate diet		
Never	35	43.7
Sometimes	22	27.5
Always	23	28.8

Employment status, 13 (16.3%) were unemployed, 30.8 (47.4%) self-employed and 39 (36.3%) were formally employed. Relating to usual household members 5 (6.2%) claimed they lived alone, 29 (36.3%) lived with 3 members, 39 (48.7%) lived with four members, 3 (3.8%) lived with five members and four (5.0%) lived with members above five. Thirty-four (42.5%) earned amount 100USD and less. Thirty-seven (46.3%) earned between 101 to 200 USD, four (5.0%) earned between 201 to 300 USD, 2 (2.5%) earned between 301 to 400 USD and three (3.7%) earned more than 400 USD. In terms of place of residence 61 (76.2%) lived in the urban high density, two (2.5%) lived in the urban middle density, 12 (15.0%) lived in the urban low-density area. Four (5.0%) lived in rural area and 1 (1.3%) respondent lived in the farming area. Relating smoking and alcohol consumption, 26 (32.5%) were alcohol consumers and 54 (67.5%) non-alcohol consumers mean 1.68. Seventeen (21.3%) were smokers while 63 (78.1%) were non-smokers.

Self-care practice

Self-care practice is practice of activities that the individual initiate and perform on their on behalf in maintaining life health and well being (Orem, 1990). The total score of self-care ranged between 22 to 36 out of a possible score of 51.

Therefore self-care practice focuses on adherence to prescribed treatment. This was to identify factors related to feasibility preferences, as well as ability of clients.

Table 2.1 presents factors associated with self-care practices among the pulmonary tuberculosis clients on therapeutic treatment. This section has 15 questions. On taking correct doses of drugs all 80 (100%) respondents claimed they always did so and also kept their appointments as well as always taking drugs at once. On the question

concerning swallowing under supervision 29 (36.3%) never swallowed their tablets under supervision, 16 (20.0%) sometimes swallowed tablets under supervision and 35 (43.7%) always swallowed their (tablets) drugs under supervision of a health worker or family member. Addressing whether respondents ever stopped taking drugs 71 (88.7%) respondents stated that they never stopped taking their drugs and nine respondents stated that they sometimes stopped taking some drugs. Concerning adequate diet 35 (43.7%) never afforded an adequate diet, 22 (27.5%) stated that they sometimes afforded an adequate diet due to financial constraints and poverty, while 23 (28.8%) always afforded an adequate diet.

Table 2.2 is the continuation of self-care practices information focusing on how DOTS was conducted at the various clinics. Four respondents (5.0%) disagreed that the personal attention was satisfying, thirty-five (43.7%) agreed that personal attention was satisfying and forty-one (51.3%) strongly agreed that they were satisfied with personal attention. Six respondents (7.5%) disagreed that they were attended to early as they had to wait due to long queues or staff shortage. Forty-nine (61.2%) agreed that they were attended to early and twenty-five strongly agreed that they were attended to early. Eight (10.0%) respondents disagreed that they were attend in a friendly manner by the health workers as some were hostile, 32 (40.9%) agreed that they were attended to in a friendly manner by health workers and forty (50.0%) strongly agreed that they were attended to in a friendly manner by health workers. Fifty-six respondents (70.0%) reported that there was shortage of staff hence that caused the delay in attention and twenty-four (30.0%) strongly agree that there was shortage of staff. Thirty-nine (48.7%) agreed that there were long queues and forty-one (51.3%) strongly agreed that here were long queues. Eight

(10.0%) respondents agreed that drugs were always available all the time while seventy-two (90.0%) strongly agreed that drugs were available all the time. On having a separate clinic, 9 respondents disagreed that there were stigmatized, 55 (68.7%) agreed that they experienced stigma and sixteen (20%) strongly agreed that there was stigma. On education about DOTS twenty-seven (33.7%) agreed that they were informed about DOTS while fifty-three strongly agreed about having been educated about DOTS.

Table 2.3 on self-care practices shows information about factors that affect the ability to take tablets using the DOTS strategy. Focusing on length of treatment period 53 (66.2%) respondents related that length of treatment period sometimes affected them and twenty-seven (33.8%) responded that they were always affected. Sixty-two (77.5%) agreed that number of tablets taken at once sometimes affected them and eighteen (22.5%) responded that they were always affected. Forty-eight (60.0%) responded that they never travel frequently to collect drugs, twenty-one (26.3%) sometimes travelled frequently to collect drugs while eleven (13.7%) always travelled frequently to collect drugs. Forty-seven (58.7%) were never observed like children, twenty-one (26.3%) responded that they were sometimes affected and twelve (15.0%) responded that they were always affected by being observed like children, which was de-motivating. Forty-seven (58.7%) were never affected never stigmatized that everyone got to know that one had tuberculosis, twenty-two (27.5%) sometimes felt stigma that everyone got to know and eleven (13.8%) always felt stigma that everyone got to know that they had tuberculosis. Thirty-eight (47.7%) responded that they were never affected by waiting for hours, before being attended to thirty-one (38.8%) were sometimes affected while twenty-seven (13.8%) were always affected. Thirty-five (43.7%) were never feeling too

sick, eighteen (22.5%) respondents sometimes felt too sick and twenty-seven (33.8%) always felt sick.

Table 2.4 is the continuation of self-care practices. Thirty-five (43.7%) respondents did not take their drugs at the same time daily while forty-five (56.3%) always took their drugs at the same time daily. Two (2.5%) respondents stated that they did not take their tablets daily 78 (97.5%) took their tablets daily. Thirty-six (45.0%) responded that they did not always take their tablets at the same time while forty-four (55.0%) always took their tablets at the same time. Twelve (15.0%) incorrectly dispose their sputum, 42 (52.5%) disposed sputum partially correct while 26 (32.5%) correctly disposed sputum. Fifteen (18.7%) did not know the correct way of disposing the sputum, 33 (41.3%) were partially correct in on where to dispose the sputum and thirty and thirty-two (40.0%) correctly knew where to dispose the sputum. All the 80 (100%) responded that they always covered their month when coughing or sneezing. All the 80 (100%) responded that they obtained their drugs from the health centre.

Table 2.5 shows the summary of the dependent variable which is self practices. These included mean = , median 29.0, range 21 to 36, S.D. 3.62, mean 29.5. Above mean 38 and below mean 42.

Table 2.2
Self-care Practices (ii)
(N = 80)

Variables	Frequency	Percentage
Satisfied with personal attention		
Disagree	4	5.0
Agree	35	43.7
Strongly agree	41	51.3
Attended to early		
Disagree	6	7.5
Agree	49	62.2
Strongly agree	25	31.3
Friendly health workers		
Disagree	8	10.0
Agree	32	40.0
Strongly agree	40	50.0
Shortage of staff		
Agree	56	70.0
Strongly agree	24	30.0
Long queues		
Agree	39	48.7
Strongly agree	41	51.3
Drugs available all the time		
Agree	8	10.0
Strongly agree	72	90.0
Having separate clinic/stigma		
Disagree	9	11.3
Agree	55	68.7
Strongly agree	16	20.0
Education about DOTS		
Agree	27	33.7
Strongly agree	53	66.3

Table 2.3
Self-care Practice (iii)
(N = 80)

Variables	Frequency	Percentage
Length of treatment period		
Never	53	66.3
Sometimes	27	33.7
Number of tablets taken at once		
Never	62	77.5
Sometimes	18	22.5
Having travel frequently to collect drugs		
Never	48	60.0
Sometimes	21	26.3
Always	11	13.7
Being observed like children de-motivating		
Never	47	58.7
Sometimes	21	26.3
Always	11	13.7
Stigma everyone gets to know that one has TB		
Never	47	58.7
Sometimes	22	27.5
Always	11	13.8
Waiting for hours before one is attended to		
Never	38	47.5
Sometimes	31	38.7
Always	11	13.8
Feeling too sick		
Never	35	43.7
Sometimes	18	22.5
Always	27	33.8

Table 2.4
Self-care Practice
Do you always take your drugs at the same time daily
(N = 80)

Variables	Frequency	Percentage
Taking tablets same time daily		
No	35	43.7
Yes	45	56.2
Do you take tablets daily		
No	2	2.5
Yes	78	97.5
Do you always take them at the same time		
No	36	45.0
Yes	44	55.0
How is the sputum disposed		
Correct	12	15.0
Partially correct	42	52.5
Incorrect	26	32.5
Where do you dispose your sputum		
Correct	15	18.7
Partially correct	33	41.3
Incorrect	32	40.0
Do you always cover your mouth when you cough		
Yes	80	100.0
Where do you obtain your drugs		
Health centre	80	100.0

Table 2.5
Total Scores for self-care Practices

Variables	Frequency	Percentage
Total scores		
21	1	1.3
22	1	1.3
24	7	8.7
25	2	2.5
26	5	6.3
27	7	8.7
28	11	13.7
29	8	10.0
30	7	8.7
31	6	7.5
32	6	7.5
33	5	6.3
34	6	7.5
35	4	5.0
36	4	5.0

Knowledge levels on tuberculosis treatment.

Table 3.1 shows data among on the knowledge on tuberculosis treatment three (3.7%) they responded that they could stop taking tablets when they felt better while seventy-seven (96.3%) responded that they would not do so. Eighty (100%) clients responded that they would not stop take tablets when they stopped coughing. Eighty (100%) they responded that they would finish the prescribed course. All 80 (100%) clients claimed that they obtained information pertaining to the disease and treatment from the nurse.

Table 3.2 illustrates knowledge of participants regarding source of information, definitions, causes, signs and symptoms spread. Twenty-eight (35.0%) gave partially correct information about tuberculosis treatment and 52 (65.0%) gave correct information. On how the respondents felt about the effects of the prolonged length treatment twenty-eight (35.0%) gave partially correct information while fifty-two (65.0%) gave correct information. Thirty-four (42.5%) respondents gave incorrect responses in defining tuberculosis. They actually did not know what tuberculosis was. Thirty-six (45.0%) defined tuberculosis is partially correct while the 10 (12.5%) defined tuberculosis correctly. Thirteen (16.2%) did not know the correct causes of tuberculosis as reflected by some respondents stated “manyoka” means “diarrhea” and witchcraft as causes. Thirty-eight (47.5%) gave partially correct causes of tuberculosis. Thirteen (16.3%) did not know the correct signs and symptoms, 34 (42.4%) partially knew the correct signs and symptoms while thirty-three (41.3%) gave correct signs and symptoms of tuberculosis. On how tuberculosis is spread 20 (25.0%) spelt out incorrect ways, 35 (43.7%) gave partially correct information and 25 (31.3%) gave correct information on

how it is spread. On what action should the respondents do when supply of drugs were about to finish, only 1 (1.3%) respondents reported partially correct information while 79 (98.7%) respondents stated that they should report to the health centre.

Table 3.3 on DOTS information, when they were asked the meaning of DOTS 41 (51.3%) respondents failed to define it thus giving incorrect information, 12 (15.0%) gave partially correct definition while 27 (33.7%) correctly defined what DOTS was. The respondents were further asked of the advantages of DOTS in 3 parts, 42 (52.5%) gave incorrect information that DOTS ensured taking of prescribed treatment, 22 (27.5%) partly agreed and 16 (20.0%) correctly stated that DOTS ensure taking of prescribed treatment. On another advantage of DOTS, 60 (75.0%) did not know that DOTS reduces drug resistance, 19 (23.7%) gave partially correct information and only 1 (1.3%) agreed that DOTS can reduce drug resistance. The other advantage of DOTS was reduction of transmission of disease, only 2 (2.4%) respondents gave incorrect information, 39 (48.8%) gave partially correct information and 39 (48.8%) correctly stated that DOTS can reduce transmission of disease. When respondents were asked whether they could stop taking tablets, 18 (22.5%) they gave partially correct information while 62 (77.5%) responded correctly. On the type of diet that should a tuberculosis client take, 32 (40.0%) responded giving partially correct information while 48 (60.0%) responded correctly. Most respondents expressed concerns that food supply was inadequate although they knew what the correct diet should be. Concerning data on period of tuberculosis treatment and how tuberculosis can be prevented, 45 (56.3%) respondents reported incorrectly, 34 (42.4%) gave partially correct information while only 1 (1.3%) respondents knew the correct period of tuberculosis treatment.

Table 3.4 respondents were also asked how tuberculosis can be prevented from spread. Only 1 (1.3%) respondents did not know that overcrowding could cause spread of tuberculosis. Sixteen (20.0%) respondents partially knew that avoiding crowding could reduce spread of tuberculosis while 63 (78.7%) respondents stated correctly that avoiding overcrowding could prevent spread of tuberculosis. The respondents also were asked whether treatment of the infected could prevent tuberculosis from spreading, only 2 (2.5%) did not know this, thirteen(16.3%) partially knew that this could reduce spread of tuberculosis while 65 (81.2%) correctly indicated that treatment of the infected could prevent spread of tuberculosis. On whether good ventilation can also prevent tuberculosis from spreading only one (1.3%) respondent did not know, 30 (37.4%) respondents gave partially correct information while 49 (61.3%) respondents correctly stated that good ventilation can prevent tuberculosis from spreading. Concerning information on tuberculosis cure, even in HIV positive, when a respondent can discontinue treatment and side effects, all 80 (100%) respondents agreed that tuberculosis can be cured. Ten (12.5%) respondents did not know that tuberculosis can be cured even in HIV positive and 70 (87.5%) respondents agreed that tuberculosis can be cured even when the respondent was HIV positive. When asked whether respondents should discontinue treatment if drugs were not available, all 80 respondents (100%) disagreed to this. When asked about the commonest side effects that could be experienced all 80 (100%) respondents knew or had heard about rashes and peripheral neuritis (chiveve) or joint pain as common side effects.

Table 3.5 shows the summary of the independent variable that is knowledge on therapeutic treatment on tuberculosis. This shows the level of comprehension of the clients. Minimum was 24 while the maximum was 39.

Table 3.1 Knowledge
(N = 80)

Variables	Frequency	Percentage
Whether someone on TB treatment can stop taking drugs feels better		
Yes	3	3.7
No	77	96.3
Whether someone on TB treatment can stop taking their drugs when they stop coughing		
No	80	100.0
Whether someone on TB treatment should finish the course		
Yes	80	100.0
Where to obtain information on Disease and treatment		
Nurse	80	100.0

Table 3.2
What information pertaining to Disease and treatment
(N = 80)

Variables	Frequency	Percentage
Information pertaining to Disease and treatment		
Partially correct	28	35.0
Correct	52	65.0
How do you feel about the effects of the prolonged length of treatment		
Partially correct	28	35.0
Correct	52	65.0
What is Tuberculosis		
Incorrect	34	42.5
Partially correct	36	45.0
Correct	10	12.5
Causes of tuberculosis		
Incorrect	32	40.0
Partially correct	38	47.5
Correct	10	12.5
Signs and symptoms of Tuberculosis		
Incorrect	13	16.3
Partially correct	34	42.4
Correct	33	41.3
How is Tuberculosis spread		
Incorrect	20	25.0
Partially correct	35	43.7
Correct	25	31.3
When supply of drugs is about to finish what should the client do		
Partially correct	1	1.3
Correct	79	98.7

Table 3.3
Meaning of DOTS
(N = 80)

Variables	Frequency	Percentage
Meaning of DOTS		
Incorrect	41	51.3
Partially correct	12	15.0
Correct	27	33.7
Advantage-ensure taking of prescribed treatment		
Incorrect	42	52.5
Partially correct	22	27.5
Correct	16	20.0
Advantage –Reduce drug resistance		
Incorrect	60	75.0
Partially correct	19	23.7
Correct	1	1.3
Advantage – Reduce transmission of disease		
Incorrect	2	2.4
Partially correct	39	48.8
Correct	39	48.8
When can a TB client stop taking tablets		
Partially correct	18	22.5
Correct	62	77.5
What type of diet should a TB client take		
Partially correct	32	40.0
Correct	48	60.0
How long is TB treatment whether it is a minimum of 6 months and maximum of 8 months		
Correct	45	56.3
Partially correct	34	42.4
Incorrect	1	1.3

Table 3.4 Knowledge
(N = 80)

Variables	Frequency	Percentage
How can TB be prevented from spread in an overcrowding		
Incorrect	1	1.3
Partially correct	16	20.0
Correct	63	78.7
Treatment of the infected client		
Incorrect	2	2.5
Partially correct	13	16.3
Correct	65	81.2
Good ventilation		
Incorrect	1	1.3
Partially correct	30	37.4
Correct	49	61.3
Can pulmonary tuberculosis be cured		
Yes	80	100.0
Can pulmonary tuberculosis be cured even when one is HIV +ve.		
No	10	12.5
Yes	70	87.5
Should a client with tuberculosis discontinue treatment of drugs are not available		
No	80	100.0
The side effect that are common among clients on tuberculosis treatment rash and peripheral neuritis		
Rash		
Yes	80	100.0
Peripheral neuritis		
Yes	80	100.0

Table 3.5
Total Scores of Independent Variable (IV)

Variables	Frequency	Percentage
Total scores		
24	1	1.3
25	1	1.3
27	1	1.3
28	12	15.0
29	9	11.3
30	13	16.2
31	13	16.2
32	7	8.7
33	9	11.3
34	6	7.4
35	3	3.7
36	1	1.3
37	3	3.7
39	1	1.3

Relationship between knowledge and self-care on tuberculosis treatment. Pearson's Correlation Analysis

Table 4.1 displays positive effect (b = < .001) of self-care. The results support that as knowledge increases self-care practices of tuberculosis therapeutic management. The significant regression co-efficient indicated a positive change in self-care practices. The significant R^2 of .125 indicates that knowledge explains 12.5% of the variance on self-care practices. F = 11.140 means just testing for the significant value 001. Betta 0.354, co-efficient in the independent explains for the change or increase in the independent variable.

Table 4.1

Pearson Correlation Matrix self-care and knowledge on tuberculosis treatment.

		Y
		1.000
X independent		.354 **
* p < .05	** p < .01	*** p < .001
(N = 80)		

Y Self-care Practices

X Knowledge

Regression Analysis

Table 4.2 shows a statistical report R squared is .125 expressed as a percentage was equal to 12.5%. This implies that knowledge accounts for 12.5% of the variance in the self-care practice. Although knowledge has relationship with self-care there was a bigger percentage contributed by other factors. F statistics = 11.140, this showed that r squared is significant of (0.001), F = 11.140; p = .001). The t test for unstandardised regression core-efficient (b = 465; p 0.001) this represented that for every unit change in the dependent variable there was a 0.465 change in the independent variable. The significant standardized regression core-efficient (B = .354; p = 0.001) represented the importance of the independent variables (knowledge). The bigger the value the more important it was therefore here it was moderately important. This is supported by Porter and Grange (1999), who indicated that studies showed that patient's perceptions regarding disease and treatment had limited influence on their self care practices or behaviors, (see table 14).

Table 4.2

Regression Analysis of Self-care

Variable	B	SEB	Beta
X knowledge	0.465	0.139	0.354
Constant	15.086		
R2 = .125		F 11.140	
* p < .05	**p < 0.01	*** p < .001	
N = 80			

Key

X = Knowledge

CHAPTER 5

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

Summary

The purpose of the study was to examine the relationship between self care practices and knowledge regarding tuberculosis treatment among clients with tuberculosis attending Beatrice Road Infections Disease Hospital outpatient clinic in Harare. An average of 20 to 30 clients are attended at this hospital with an average of 100 to 150 on tuberculosis treatment. The dependent variable in this study was self-care with 14 items, maximum score of 36 and minimum score of 21. The independent variable was knowledge with the maximum score of 43.

Tuberculosis is a worldwide public health problem with a continued increase in both morbidity and mortality. Recently it has been compounded by the HIV/AIDS pandemic. Orem's self-care model was used to guide the study.

In this study the hypothesis was that as knowledge increases self-care practices increase. A descriptive correlational study design was used. The sample of 80 were selected by the probability simple random sampling. A structured interview schedule was used to collect data on demographic section data on knowledge regarding tuberculosis treatment. Data was analysed using the descriptive and inferential statistics in the form of frequencies and tables.

The highest scores were reported on these areas with a score of 2 each always successful in taking correct doses, able to keep schedules of appointment and always took drugs as once. On knowledge high scores were achieved on these areas where respondents reported that they did not stop taking tablets when they stopped coughing

and that someone should not stop taking treatment before finishing the course. They also reported that they obtained information from the nurse, all were knowledgeable about effects of tuberculosis drugs scoring some scores of concern were on self-care variance diet, 35 (42.8%) did not afford it due to poverty, 22 (27.5%) only afforded some while 23 (28.8%) could afford an adequate diet. Diet in management of tuberculosis plays a pivotal role in order to improve body immunity.

Pearson correlation coefficient was used to examine the relationship between self-care practices and knowledge among clients on tuberculosis therapeutic management. The results showed Pearson correlation coefficient was statically significantly weak positive ($r = 0.354$; $p < 0.01$). This means that as knowledge increases self-care practices increase.

Regression analysis was done to check the strength of the relationship between self-care practices and knowledge among clients on tuberculosis therapeutic management. The regression analysis showed a significant positive effect $b = p < 0.01$ of self-care.

Statistical report R2 is .125 and expressed as a percentage 12.5%. This implied that knowledge accounted for 12.5% of the variance in the self-care practice. Although knowledge had relationship with self-care there was bigger percentage as contributed to other factors. Therefore there is need to further replicate this study in order to benefit medical and surgical nursing.

Discussion

Sample Demographics

The study was based on the sample size of 80 respondents aged between 22 to 40 years on tuberculosis treatment. Literature indicates that studies can use various sample sizes ranging from a minimum of 65 to more than 600. This meant that the sample size for this study was fairly small but acceptable. The respondents were randomly selected. The study site was Beatrice Road Infections Disease Hospital in Harare. The study comprised of 48 (60%) females and 32 (40%) males as gender/sex distribution. Although it was believed that males are more risky than females in this study the impression was that most women were care givers of their family members and relatives on home based care. Most of them were suffering from communicable diseases including pulmonary tuberculosis diseases also as an opportunity infection among the HIV positive infected clients. In terms of age characteristics, the respondents ranged from 22 to 40 years, minimum and maximum respectively. This was an active group which was still in the working economically productive class. The mean age was 32.08; median 33.00; S.D 5.46; and mode was 36. The majority of the respondents were between 32 and 40 years. One respondent was aged 38. Considering the age group of respondents were more likely to implement the treatment plan as scheduling. The aim was to recover quickly and return to work. This age group also attributed to the high prevalence rate of tuberculosis in Zimbabwe. This is supported by the fact that in Zimbabwe tuberculosis remains one of the major public health problems and is ranked one of the 22 high burden countries in terms of tuberculosis in the world. (WHO, 2000). This is also attributed to the high prevalence rate of tuberculosis in the country especially in the reproductive age group

where HIV is prevalent, (WHO, 2000). This is also attributed to the high prevalence rate of tuberculosis in the country especially in the reproductive age group where HIV positive is high as these are sexually active.

A study Ait Khaled et al (2003), the study described age distribution of tuberculosis internationally. In countries which are highly populated it was reported that tuberculosis affects mainly young, economically and active adults and thus has huge economic social and familial repercussions. Zimbabwe is no exception. On marital status, the findings were that 9 (11.3%) were single, 46 (57.0 %) were married and lived with their families, 13 (16.3%) were widowed and 12 (15.0%) were divorced. This showed that the family support was helpful in implementing treatment among the clients on tuberculosis. Kennedy (1999) reiterated that family is valued as important course of health information and helpful in managing diseases. Most of the respondents were Christians 70 (87.55). This showed that they had no intentions of seeking help from traditional healers like the 9 (11.3%) who believed in tradition and only 1 (1.3%) respondents believed in Moslem. On level of education 78 (97.6%) had attained 'O' Level and beyond. This showed the sample had high literacy rate. High level of educational status facilitates better communication between client and health care providers. It also increased retention of information provided by health care providers, therefore better implementation of interventions that would have been recommended for example taking tablets same time daily and completion of course of treatment.

Cultural influences play a distinct role in decision making related to selection of self care practices. Unfortunately, contracting tuberculosis does not discriminate whether educated or not. On the item on employment, 29 (36.3% were formally employed, 13 (16,

3%) were unemployed while 38 (47.4%) were self employed. Despite the higher level of education, employment status was varied with majority being self employed. Trades included mostly, vending and cross border traders. On formal employment majority of the respondents were engaged in general work.

Cahill (1996) indicated that because of consumer knowledge, the concept of the implementation of discharge plan had been very important in medical surgical nursing. On item related to house hold members only 5 (6.2%) respondents lived alone. This showed that these lacked social support, whereas 68 (93.8%) lived with their families hence had social support on completion of tuberculosis treatment. Findings of the study concluded in rural district in Malawi that rural district in Malawi, in which guardians supervised tuberculosis treatment in order to promote adherence. In a study by Marumani (1996) it was found that some family members encouraged and supervised tuberculosis treatment in order to promote adherence. In another study it was found that some family members encouraged and supervised the clients on anti- tuberculosis treatment to enhance completion of treatment (Marumani , 1996).

Item on income 34 (42.5%) earned less than 100 USD, and below, 37 (46%) earned between 101USD and 200USD, 4 (5%) earned between 201 to 300 USD while 2 (2.5%) earned 301 – 400USD, and 3 (3.7%) more than 400 USD. The occupation and monthly income may indicate that the majority of the respondents on tuberculosis treatment were of the lower economic status and this may reflect their dependence level. Dependence affects the role in relation to family work and ability to purchase resources (Roper, Logan & Tierery, 1996) which concurs with Moyo's (2003) findings that home based care can decongest the hospital by permitting a more appropriate implementation

of plan at home, thereby reducing hospital costs and re-admissions. This is why DOTS is promoted. Clients would be coming from home as a better approach than when clients were being nursed in Sanatotrium, (WHO, 2000). In Zimbabwe tuberculosis treatment is free of charge except in private practice (Ministry of Health and Child Welfare, 2007). Most of the respondents in this study are living below the poverty datum line according to the Zimbabwe Standard. In terms of usual place of residence 61 (76.2%) lived in the urban high density suburb which is usually. characterized by overcrowding, squalled condition and poorly ventilated houses or dwellings. This was supported by that majority were from the low socio-economical status hence could not afford better houses. Also they were low income earners therefore they were mostly malnutritioned as good nutrition was unaffordable. This compromised the body immunity. This was supported by Knight (2000) in a report that tuberculosis affects mostly the poorest people in the world. On the issue of social habits this was of great concern. Despite health education 26(32.5%) respondents were alcohol consumers, while the rest did not. On the issue, of smoking 17(21.3%) respondents were smoking. The respondents did not consider these habits as detrimental to their health. This showed that smoker's rate was still high as compared to other studies results. In a study by Wilson, Scamagus & Gema (2002) the results were that 10% of the asthmatic respondents were smokers while the rest did not. Asthma and tuberculosis are both respiratory conditions. In a study conducted in India, Samtha et al (2000) reported that the higher rates of defaulters were associated with irregular treatment, history of previous alcohol consumption and being males. In this study all those who smoked and consumed alcohol were male respondents. Tusku, Hahn

et al (2004) described problems such as homeless, alcohol and drugs as reasons described for poor adherence to TB treatment.

Self Care Practices

Self Care practice is a practice of activities that the individual initiate and perform on their own behalf in maintaining life, health and well being (Orem, 1990). The computed self care practice had a maximum score of 51 and a minimum score of 21.

The mean response for self care practices was and only was above the mean would indicate relatively poor self care practices any frequencies below the mean would indicate bad self care practices. Self care practices focused on adherence to prescribed treatment.

On self care practices all respondents believed on taking all correct doses of drugs, kept their scheduled appointments and taking drugs at once. These 80 respondents scored 2 points each for each question. That indicated good self care practices. Given the fact that 75% of health care is self care (William & Donaher, 1978), it would seem prudent for an individual to keep his or her own medication. On keeping appointments this was supported by Ndudzo (1994) who associated keeping appointment with adherence to treatment. Regarding swallowing tablets under supervision 29 (36.3%) never swallowed their tablets under supervision, 16 (20%) sometimes swallowed tablets under supervision while 35(43.7) always swallowed their tablets under supervision of a health worker a family member. These findings had a bearing on how impractical it was to adhere to treatment throughout on DOTS at clinic. This was in line with finding of Marumani (1996) that people with chronic illness relied on their judgment own how to manage their illness.

On issue whether they ever stopped taking their drugs 71 (88, 7%) responded that they never stopped taking their drugs. This indicated a positive self care practice and health seeking behaviour, 9 (12.3%) sometimes missed their doses due to various reasons such as lack of drugs at the clinic and did not manage to go to the next centre due to long distance and transport cost. World Health Organisation had a set target level of 85% for treatment success (WHO, 2005). Defaulting or failing to take treatment as prescribed has been a major threat to stop TB strategy and TB programme. This may increase the risk of multi drug resistance, relapse and prolonged infection.

On issue on adequate diet 35 (43,7%) respondents admitted that they never afforded adequate diet due to poverty or low income. The same was expressed by 22 (27.5%) who responded that they sometimes afforded an adequate diet. Only 23 (28.8%) respondents agreed that they could afford an adequate diet. Poverty causes malnutrition which causes immune suppression. This predisposes people to active pulmonary tuberculosis.

On how DOTS was conducted at the clinic, 4 (5%) respondents were dissatisfied, 35 (43,7%) satisfied and 41 (51,3%) strongly satisfied about the way DOTS was conducted Zimbabwe adopted the WHO DOTS strategy in 1995 an international strategy for tuberculosis treatment and control. Responding to whether they were attended to easily 6 (7,5%) stated that they were never attended to early as they were long queues of clients and there was shortage of staff. Forty nine (61.2%) respondents stated that they were attended to early while 25 (31.3%) strongly agreed that they were attended to in a friendly manner while 40 (50%) strongly agreed to friendly manner. On how DOTS was conducted 56 (70%) respondents stated that there was shortage of staff while 24 (30.0%)

strongly agreed that there was shortage of staff. This resulted in long queues forming and hence delays were experience. This affected the times when drugs were supposed to be administered to respondents. This was supported by such studies conducted by Singh (2000) and Findlay, Lancaster, Holtz, Vander Walt and Miranda (2002). Findings revealed that the reasons for defaulting from TB treatment included patient's perceptions of negative attitudes among health workers. This was also cited in South Africa, similar study findings were also found in the study by Khan where clients reported dissatisfaction with health care providers. They reported problems with access to treatment both in terms of time and cost. Thirty–nine (48, 7%) agreed that long queues were experienced while 41 (51.3%) strongly agreed that long queues were a problem of concern as they had to wait.

As far as drug availability was concerned 8 (10%) respondents agreed that the drugs were always available. This was a positive aspect to promote self-care practice. Only 72 (90.0%) disagreed that having a separate clinic was associated with stigma. Although this was experience or expressed the respondents made efforts to continue seeking treatment. This was a positive attitude towards self care practice. Dots as a strategy to manage and control tuberculosis every client on this treatment has a right to information as part of dots strategy a client with tuberculosis takes daily pills among supervised treatment. Therefore 27 (33.7%) concurred that they were informed while 53 (67.3% strongly agreed that they had been educated about Dots. The factors that affect Dots method among them are the fact about length of treatment period 53 (66.2%) related that this sometimes affected them. Duration of tuberculosis treatment was 6 to 8 months and the client is expected to take treatment using Dots strategy. Some clients were

tempted to stop treatment especially dependent rate associated with single client's unmarried, divorced alcoholic and widowed. Addressing the number of tablets that had to be taken at once 62 (77.5%) respondents agreed that this affected them while 18 (22,5%) concerned that they were strongly affected.

Most respondents confirmed that they never travelled to long distance from their place of residence as they visited local clinics which are within 1to 3 kilometers especially in the urban area. Forty eight (60.0%) respondents stated that they never travelled long distances to collect drugs, 21 (26.3%) sometimes had to travel while 11(13,7%) always traveled frequently to collect drugs especially attending Beatrice Road Infections disease Hospital, were all clients were enforced to be assessed by the TB specialist, notified and commenced on Dots strategy according to the Zimbabwe policy of tuberculosis management and control. All tuberculosis respondents also travelled to this centre when the intensive phase was completed and then commenced on continuation phase or when they become too ill to be managed at home. This was when the respondents expressed that they incurred costs. Dots strategy means being observed while swallowing tablets to ensure completion. Forty seven (58.7%) respondents were never observed like children 21 (26.3%) respondents reported that they were sometimes observed while 12 (15%) responded that they were always affected by being observed. This resulted in stigma as indicated in the next point. Forty seven (58.6%) were never affected by stigma while 22 (27.5%) sometimes felt stigmatized and 11 (13.8%) always felt stigmatized and 11 (13.8%) always felt stigmatized when everyone got to know that they had tuberculosis. This was supported by the fact that lack of knowledge about tuberculosis and stigma were reasons cited when TB clients visiting traditional healer

more than going to health clients (East wood and Hill 2004) In view of waiting for hours before being attended to 38 (47.7%) respondents agreed that they were never affected by waiting for hours while 11 (13.8%) were affected by waiting for hours before being attended to.

Thirty five (43.7%) respondents , admitted that they did not take their drugs at the same time daily while 45 (56.3%) always took their drugs at the same time daily two 2.5% respondents reported that they did not take their tablets daily while 78 (97.5%) agreed that they took their tablets daily. Thirty six (45%) respondents reported that they did not always take their tablets at the same time while 44 (55.0%) took their tablets at the same time. Although most of the respondents complied with their treatment it is important for the drugs to be taken at the same time at once daily. Respondents stated that long queues, shortage of staff and non availability of drugs need to be addressed by the health service management. Tuberculosis is a droplet infection hence compliance to treatment is a primary goal according to dots strategy. In tuberculosis infection control and proper disposal of sputum play a crucial role. Twelve 15.0%) respondents admitted that they incorrectly disposed their septum due to lack of knowledge 42 (52.5%) disposed their septum due to lack of knowledge, 42 (52.5%) disposed their sputum partially covered while 26 (32.5%) reported that they correctly disposed their sputum as informed through health education. TB is caused by mycobacterium tuberculosis, the bacteria can be detected in the sputum as sputum smears test are done (WHO Addendum). All 80 (100%) respondents reported that they always covered their mouth / nose when coughing or sneezing. This is a positive aspect as self care. If tissues are used they must be disposed in worse receptades or burnt to prevent spread of information. Also all 80

(100%) respondents reported that they obtained their drugs from a health care centre to ensure self care practices.

Rising poverty levels, poor environments and the HIV virus have contributed to the resurgence of TB, which thrives on immune systems weakened by chronic infections and by malnutrition. It is currently estimated that the number of TB cases increased by five-fold in the last 15 years, from 9.132 cases in 1990 to 20831 cases in 1995, and 51 918 cases in 2000. The incidence of TB increased from 121 cases per 100000 in 2000. The national target is to return to 121 cases per 100000 people by 2015, (Zimbabwe Millennium Development Goals, 2004 Progress Report).

Knowledge on Tuberculosis Treatment

The Ministry of Health adopted the Dots strategy as a Global commitment by WHO in 1993. The aim was to improve adherence among clients on tuberculosis therapeutic treatment. For this to be successful knowledge must be imparted to both the health workers who would be able to empower the clients. Knowledge relates to what the tuberculosis clients could relate. This section was measured using an interview schedule which comprised of 14 questions. Scores range from 24 to 43. Total respondents = 80 above mean = 43 below mean = 37 maximum, = 39 minimum, = 24. This showed the respondents were knowledgeable about tuberculosis treatment and disease. The respondents were asked whether they would stop taking tablets when they felt better and whether they stopped coughing. Three (3.7%) agreed that they could stop taking tablets when they felt better, 77 (96.3%) denied that they would not stop the treatment. Eighty (100%) respondents reported that they would not stop taking treatment when they stopped coughing. This showed positive attitude displaying knowledge on completion of

prescribed treatment. This was supported by studies conducted in Thailand that have demonstrated that client with a good attitude or social support have excellent compliance than those who did not. In some studies conducted in Thailand and India they reported that some clients interrupted treatment when they felt better and around one or two months after initiating chemotherapy (Akkslip 1999; Somarat 2005; Laona, Tuba, Siziya & Sikaona, (2004). Also all 8 (100%) respondents positively agreeing that they would finish the prescribed course and they all obtained information pertaining to disease and treatment from the nurse. It is therefore imperative that knowledge is imparted in order to empower their clients. This was supported by Monsky (1990) who reported that patients got health education from nurses and promoters in order to adhere to TB treatment especially on one to on basis. Concerning type of information they received about TB treatment 28 (35.0) % responded that they had received some information while 52 (69.0% agreed that they had received information about tuberculosis treatment. About prolonged treatment period 28(35%) responded giving partial correct information while 52 (65.0%) gave correct information. Because of the prolonged treatment periods some studies reported that during this period most symptoms disappear and clients might erroneously believe that they were cured. This might be also due to prolonged duration thirty- four (42.5%) respondents failed to define tuberculosis, 38 (47.5%) had scanty knowledge on causes while10 (12.5%) were knowledgeable about the causes of tuberculosis. Despite the educational level displayed the responses on knowledge about the disease and causes was rather poor. Thirteen (16.3%) failed to describe signs and symptoms the correct, 34 (42.5%) displayed some knowledge while 33 (41.3%) describe the correct signs and symptoms of tuberculosis. On how it was spread 20 (25.0%)

respondents did not know, 35(43.8%) partly had knowledge while 25 (31.3%) respond correctly. There was an excellent response on what action should the respondents do when the supply of drugs was almost running out as they all reported that they would go to the health centre except one who did not know. Importance of knowledge is vital in controlling disease. Therefore adequate health education and information about TB has been demonstrated to be more effective when given as individual counseling that groups.

Concerning knowledge about Dots meaning and advantages 41 (51.3%) respondents lacked information about dots, 12 (15.0%) respondents knew what dots was while 27 (33.0%) had knowledge about Dots. Concerning advantages of Dots that it ensured taking of prescribed treatment 22 (27.5%) partly knew this while 16 (20.0%) agreed that Dots ensured taking of prescribed treatment. Concerning Dots effect on reducing drug resistance , 60 (75.0%) did not know about this, 19 (23.7%) had some knowledge about this while only one respondent displayed knowledge that Dots reduces drug resistance. On reducing disease transmission 2 (24%) respondents were ignorant , 39 (48.8%) partly had knowledge on this while 39 (48.8%) respondents agreed that Dots reduces transmission of disease. Concerning diet, 32 (40.0%) respondents were moderately knowledgeable while 48 (60.0% had good information in the balanced diet. They expressed poverty as a cause of concern due to low socio – economic factor. On whether the client with tuberculosis can be cured, stopped taking tablets 18 (22.5%) had poor information while 62 (77.5%) were knowledgeable. On prevention of tuberculosis 45 (56.3%) were ignorant while 34 (42.4%) partly knew and only one respondent (1.3%) respondents was knowledgeable. This implies that there was need to educate clients on disease and its management. This supported findings by the study conducted by Dzuda

(1994) which showed that lack of knowledge on signs and symptoms, side effects on drugs led to non adherence to tuberculosis treatment.

As far as spread of pulmonary tuberculosis is concerned the findings revealed than 20 (25%) of the respondents were ignorant. This showed that the respondents were at risk of infecting others. On the Duration of TB treatment all respondents 80 (100%) were knowledgeable. This promotes compliance prevention of spread could be achieved by avoiding overcrowding, treating the infected and provision of good ventilation. Only one (1.3%) respondent was ignorant that overcrowding causes spread of tuberculosis, 16 (20.0%) had scanty information while 63 (78.7%) respondents were well versed that overcrowding has risk of spreading tuberculosis. The 2 (2.5%) also responded that they were ignorant that treating the infected clients prevented tuberculosis from spreading 13 (16.3%) had same information while 65 (81.2%) were well knowledgeable that treating the infected prevented spread of infection. One (1.3%) respondent did not know that good ventilation prevented spread of infection. One (1.3%) respondent did not know that good ventilation prevented spread of tuberculosis, 30 (37.4%) had scanty information while 49 (61.3%) knew that good ventilation prevents spreads of infection.

On information on TB cure, TB+ HIV positive cure, whether one should discontinue treatment and commonest side effects, there was a positive response that all respondents agreed that TB is curable. TB and HIV cohabitant, 10 (12.5%) responded that TB in HIV +ve was not curable while 70 (87.5%) agreed that it was curable. All respondents 80 (100%) agreed that clients should not discontinue treatment when drugs were not available. All respondents were well versed on the commonest side effects to tuberculosis drugs such as rash and peripheral neuritis.

The common among adverse effects of tuberculosis drugs are skin eruption which could be severe in most instances for example Steven Johnson syndrome which can occur from Isoniazide Rifampian Pyrazinude and streptomycin (Ministry of Health and Child Welfare, 2007)

Relationship between self care practice and knowledge among the tuberculosis clients.

The results were summarized as follows Pearson Correlation, Core-efficient showed a statistically significant weak positive Correlation, core-efficient of 0.354 and showed a weak positive relationship between self-care practice and knowledge ($r = 0.354$; $p < 0.01$). This meant that as knowledge increased self-care practice increased. The study $R^2 = 125$. Adjusted R = 114. Although these findings revealed that knowledge on tuberculosis treatment using DOTS assisted the respondents to adhere to treatment hence improve self care practices. There was need to improve health education among respondents. This also supported the statement by the Ministry of Health and Child Welfare (2005) that the importance of counseling and provision of accurate information to all clients is an important determinant of treatment compliance.

Regression Analysis

Statistical report R squared is .125 expressed as a percentage was equal to 12.5%. This implies that knowledge accounts for 12.5% of the variance in the self-care practice. Although knowledge has relationship with self-care there was a bigger percentage contributed by other factors. F statistics = 11.140, this showed that r squared is significant of (0.001), $F = 11.140$; $p = .001$). The t test for unstandardised regression core-efficient ($b = 465$; p 0.001) this represented that for every unit change in the dependent variable there was a 0.465 change in the independent variable. The significant standardized

regression core-efficient (B = .354; p = 0.001) represented the importance of the independent variables (knowledge). The bigger the value the more important it was therefore here, it was moderately important. This is supported by Porter and Grange (1999), who indicated that studies showed that patient's perceptions regarding disease and treatment had limited influence on their self care practices or behaviors.

Theoretical Framework

The theoretical framework which guided the study was that of Orem (1985), 1991) which showed the supportive – educative nursing function. This may influence the client's knowledge influencing self care practices. The supportive educative nursing was selected as it explained how the nursing agency used it to empower the client that they may overcome self care deficit. In this study demographic data such as age, sex, and health care delivery system and pattern of living were recorded. This may have impact on self care practices which would increase when the clients were empowered with knowledge on tuberculosis, therapeutic treatment. This also showed how the DOTS strategy could be assessed as a practical method of adhering to treatment. Self-care agency was said to be developed if one was able to engage in estimate transitional and productive operations such as taking decisions to keep appointments and taking correct doses at the same time daily

Implications to Nursing Practice

The finding of this study revealed that the level of knowledge on tuberculosis treatment was moderate but the rate of self care practices was low. Therefore there is need for medical surgical nursing practitioners to strengthen health education on tuberculosis disease and management as well as uses of Dots strategy to clients with

pulmonary tuberculosis. The inclusion of family members in healthy education and self care practices promotes further understanding. The scores from the respondents on the self-care indicate that potential to perform self care practice through supportive and educative nursing from the nursing staff. This would be beneficial to their health. The improvements were required on Dots.

Implications to Nursing (Education)

Health education that has been given on tuberculosis disease and treatment showed that it was moderate. The aspects addressing Dots was poorly addressed despite that Dots strategy has been implemented since 1995 to promote adherence. The nurses should be motivated to teach and promote Dots strategy. The other factors identified were that queues were long, staff shortage was highlighted. These factors also affected self care practice as individual education and counseling may be difficult. This affects implementations of Dots in clinics Medical-surgical nurse practitioners need to be equipped with adequate and current information on tuberculosis disease and management in order to promote self care. In – service education for trained is very important because it helps staff to keep abreast with new or current information for example now there is fixed Dots course.

Implications to Nursing Research

Research is aimed to improve practice, broaden understanding and provide a base for further studies, (Burns & Grove 1997). The purpose of this study was to examine the relationship between knowledge and self-care practices among clients on tuberculosis treatment. Attending Beatrice Road Infections Disease Hospital Outpatient Clinic. As these were no previous researches of this kind, there is need to conduct more researches

even to include Wilkins Hospital for more generalization of the results to greater population. The researcher did not use all the concepts of Orem's self-care model. On further studies there is need to explore more factors that influence self care practices than knowledge alone. This is supported by Pozsik (1993) who identified that knowledge alone cannot guarantee behavior change. Therefore, further studies would help to explore other factors affecting tuberculosis treatment. This could enhance more knowledge and broaden the scientific knowledge.

Recommendations

The following recommendations were points that were identified during the study. Practice: there is need to explain the meaning of Dots in more simplified manner for client's level of comprehension.

Research: there is need to replicate this study in other areas to allow generalizations about tuberculosis disease and management and include HIV/AIDS component since more clients are living with HIV.

Research is needed regarding effective strategies or maintain long term adherence to self-care practice requirements for prevention and treatment of pulmonary tuberculosis.

Research should be done with larger population that relates to behaviour factors implicated in an individual management of tuberculosis. These may incline to life style, environment factors social support habits such as smoking and alcohol nutrition and HIV status (PITC).

Efforts should be made by heath workers to provide written literature or information in at least 3 languages that are English, Shona and Ndebele as those are the major languages spoken in Zimbabwe, about tuberculosis.

This will assist in clients and relatives in comprehending self – care knowledge on tuberculosis disease and management of clients on discharge and review.

Limitations

1. The instruments were designed by the researcher who is a neophyte in research. This may have effects on the reliability and validity. This instrument was used for the first time.
2. The instrument was designed by the researcher and has never been subjected to test for validity and reliability hence had limited validity and reliability. This could affect generalization of the results.

Summary

Tuberculosis is a world wide public health problem with increased morbidity and mortality. Tuberculosis burden remained high as people had problems adhering to treatment. World Health Organisation declared Tuberculosis a global emergency in 1993 and Directly Observed Treatment short course was adopted in order to combat the disease (Ministry of Health and Child Welfare report of 2008, Zimbabwe). The purpose of the study was to examine the relationship between self-care practices and knowledge among 20-40 year old clients on tuberculosis treatment at Beatrice Road Infectious Disease hospital Outpatient Clinic. The study utilized Orem's Self-care nursing model as a conceptual framework.

A descriptive correlational design was used and a probability sampling method was employed. There were 80 subjects 48 females and 32 males aged between 22 and 40 years. The study had three instruments namely demographic Questionnaire, Self-Care practices questionnaire and knowledge questionnaire regarding tuberculosis treatment.

The application of the Pearson's correlation Analysis results showed that there was a relationship between self care practice and knowledge among the respondents on tuberculosis therapeutic management. R= 354, < P 0.01).

The Regression Analysis showed a significant positive effect $b = p < 0.01$ of self care. The significant regression (b = 465; 001) indicated that as knowledge increase self care also slightly increased. The r-squared of .125 indicated that the knowledge explained 12.5% of the variance in self care. The results supports that the implementation of knowledge among clients on tuberculosis therapeutic treatments has a positive affect on self-care practice. This study will assist medical surgical nursing in improving management of clients on tuberculosis therapeutic management.

To control tuberculosis, the challenge is to expand and increase the directly Observed Treatment Short Course (DOTS) coverage as well as combating the HIV and AIDS epidermic, (Zimbabwe Millennium Development Goals, Progress report, 2004).

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APPENDIX 1

Informed Consent

My name is Shenny Caroline Gumeyi. I am a student of Masters in Nursing Science Degree at the University of Zimbabwe. The purpose of the study is to examine the relationship between self-care practices and knowledge clients with pulmonary tuberculosis among clients aged 20-40 years. I am requesting you to participate in this study. Participation in this study might help you gain more knowledge about tuberculosis treatment. You will also have contributed to the generation of new knowledge and self-care practices on treatment of tuberculosis and is able to educate other clients with pulmonary tuberculosis.

The study will not benefit you immediately but your contribution may help to improve the quality of life of clients with pulmonary tuberculosis. The study procedures will be conducted without harm. Your participation is voluntary and may withdraw willingly from the study without any penalty. Subjects will be required to answer the questionnaire which will be represented by a number not your name to preserve confidentiality.

The questionnaire will take about 30nminutes to answer. All the data will be kept under lock and key and the keys will be kept by the investigator. The information will be destroyed when the study is complete. You will be allowed to ask questions concerning the study or about being a subject. There are no financial costs associated with your

participation. You may contact me on my cell-phone number 0912 746 351 or 04-791 631 extension 2221 if you have any questions.

Signature of the Investigator…….

Date

PARTICIPANTS STATEMENT

The study described above has been fully explained to me. I voluntarily give consent to participate in this study.

Signature of the subject …….

Date …….

Investigators signature …….

Date …….

Appendix 2

Questionnaire

Please answer all questions to the best of your ability.

Item No.

Section A

Demographic Data

1. Sex

1 Male ☐
2 Female ☐

2. How old are you? ☐

3. What is your marital status?

1 Single ☐
2 Married ☐
3 Widow/widowed ☐
4 Divorced ☐
5 Cohabiting ☐
6 Separated ☐

4. What is your religion?

1 Christianity ☐
2 Moslem ☐
3 Budaism ☐
4 Traditional ☐
Others (specify) ……

5. What level of education did you attain?

1 Did not attend school ☐
2 Primary ☐
3 Secondary ☐
4 Tertiary ☐

6. What is your employment status?

1 Unemployed ☐
2 Self employed ☐

3 Formally employed 

7. What is the number of household members who share the same house with you?

1	Alone	
2	Three	
3	Four	
4	Five	
5	Above 5	

8. What is your monthly income?

1	Less than 100 USD	
2	101 – 200 USD	
3	201 – 300 USD	
4	301 – 400 USD	
5	More than 400 USD	

9. Where do you usually stay?

1	Urban high density	
2	Urban middle density	
3	Urban low density	
4	Rural area	
5	Farming	
6	Mining	

10. Do you drink beer?

1	Yes	
2	No	

11. Do you smoke?

1	Yes	
2	No	

Section B

Self-care Practices

Key 1 = Never, 2 = Sometimes, 3 = Always.

		1	2	3
12.	Are you always successful in taking correct doses of drugs?			
13.	Are you able to keep scheduled appointments to collect drugs?			
14.	Do you always take your drugs at once?			
15.	Do you always swallow your drugs under supervision?			
16.	Have you ever stopped taking your drugs?			
17.	Did you always have an adequate diet?			

Key 0 = Disagree, 1 = Agree, 2 = Strongly Agree.

18. What do you think about the way DOTS is conducted at the clinic	2	1	0
a. Satisfied with personal attention			
b. Attended to early			
c. Friendly health workers			
d. Shortage of staff			
e. Long queues			
f. Drugs available all the time			
g. Having separate clinic/stigma			
h. Education about DOTS treatment strategy			

Key 0 = Never, 1 = Sometimes, 2 = Always.

19. What factors affect your ability to take tablets using DOTS method?	1	2	3
a. Length of treatment period			
b. Number of tablets taken at once			
c. Having to travel frequently to collect drugs			
d. Being observed like children de-motivating			
e. Stigma everyone gets to know that one has TB			
f. Wait for hours before one is attended to			
g. Feeling too sick.			

	Yes	No
20. Do you always take your drugs at the same time daily?		
21. Do you take tablets daily?	1	0
22. Do you always take them at the same time?		

	Correct	Partially Correct	Incorrect
23. How is the sputum disposed of?			
24. Where do you dispose of your sputum?	1	2	3

25. Do you always cover your mouth when you cough or sneeze?	Yes	No

26. Where do you obtain your drugs?

1 Health centre	
2 Village health worker	
3 Community nurse	
4 Non of the above	

Section C Knowledge

27. Some one on TB treatment can stop taking tablets when they	Yes	No	Don't Know
a. Feel better			

b. Stop coughing

28. Can someone on TB treatment stop without finishing the course?

Yes	No	Don't know

29. Where do you obtain information pertaining to your disease and treatment?

1	Nurse	
2	Village health worker	
3	Printed media	
4	Electronic media	

Others (specify) ……

Key 0 = Incorrect, 1 = Partially correct, 2 = Correct

		2	1	0
30	What information were you given about TB treatment			
31.	How do you feel about the effects of the prolonged length of treatment			
32.	What is tuberculosis			
33.	What causes TB (Tuberculosis)			
34.	What are the signs and symptoms			
35.	How is pulmonary tuberculosis spread?			
36.	When the supply of drugs is about to finish what should the client do?			
37.	What is the meaning of DOTS			
38.	What are the advantages of DOTS?			
a.	Ensure taking of prescribed treatment			
b.	Reduce drug resistance			
c.	Reduce transmission of disease			
39.	When can a TB client stop taking tablets?			
40.	What type of diet should a TB client take?			
41.	How long is the TB treatment?			
a.	From 6 months to 8 months			
42.	How can TB be prevented from spreading?			
1.	Avoid overcrowding			
2.	Treatment of the infected			
3.	Good ventilation			

43. Can pulmonary tuberculosis be cured?

1	Yes	1
2	No	0

44. Can pulmonary tuberculosis be cured even when one is HIV +ve?

1	Yes	1
2	No	0

45. Should a client with tuberculosis discontinue treatment if drugs are not available?

1	Yes	0
2	No	1

46. Side effects common among clients taking tuberculosis treatment

Rash

1	Yes	1
2	No	0

Peripheral neuritis

1	Yes	1
2	No	0

Thank you

APPENDIX 3

DEMOGRAPHIC DATA QUESTIONNAIRE

Gwaro rebvunzo

Ini zita rangu ndi Shenny Caroline Gumeyi. Parizvino ndiri mudzidzi mudhigiri rapamusoro rinonzi yeukoti pa univhesti yeZimbabwe. Ndirikuita ongororo yekuti ruzivo rekudyidzana nekuzvibatsira pakurapwa chirwere cherurindi emapapu makumi maviri husvikira makumi mana ekuberekwa. Ndinokumbirawo kuti munge muri muchirongwa ichi. Kuvako kwenyu muchirongwa ichi kuchabatsira kuwana humboyo hutsva maererano nemishonga nekurapwa kwerurindi remapapu. Ongororo iyi ingava isinga kubatsirei parizvino, humboyo uchiwanikwa huchakwidziridza hutano wevanorwara nerurindi. Ongororo iyi ichaitwa zvisina kukanganisa kwamuri. Kuvawawo kwenyu mushirongwa ichi ndekwekuti munenge musina kumanikidzwa, uye munobvimidzwa kubuda pasina maka yamunopomerwa.

Vanege vapinda muchirongwa ichi vanopiwa manhamba nekuti mazita anenge akachengetedzwa kuti zhisava neanozviziva. Kupindura mibvunzo kunogona kukutorerai maminitsi anosvika makumi matatu (30). Zvose zviwanikwa zvichachengetedwa nemuwongorori. Zvose zvichawanikwa zvichaparadzwa kana ongororo. yapera. Imi makasununguka kubvunza maererano neongororo kana kuva mumwe wevanopa umbowo. Hapana mubairo wemari maererano nekuwanikwa muchirongwa. Munokwanisa kundiwana panhamba dzinoti: Mbozha nare, 0912 746 351 kana kuti 04-791631 extension 2221 kana paine zvamunoda kubvunza.

Runyoro rwemuongorori ……..

Zuva ……..

Tsiniro yeumboyo

Ongororo iri kutaurwa nezvayo pamusoro yatsanangurwa kwandiri zvakazara. Ndinopabvumo ndakasunguka kupa umboyo muchirongwa.

Runyoro rweachapa umboyo

Zuva

Appendix 4

Bvunzo

Item No.

Section A

Demographic Data

1. Muri munhuyi?

1 Murume ☐
2 Mukadzi ☐

2. Mune makore mangani? ☐

3. Makaroora kana kuroorwa ?

1 Handina ☐
2 Ndakaroora/kuroorwa ☐
3 Ndakafirwa ☐
4 Takarambana ☐
5 Tinongogarisana/mapoto ☐
6 Takapararana ☐

4. Munopinda chitendero chipi?

1 Mukristu ☐
2 Machawa ☐
3 Vamwewo ☐
4 Chivanhu ☐

Zvimwewo (tsanangura)

……

5. Makasvika papi nedzidzo yenyu?

1 Handina kuenda kuchikoro ☐
2 Primary ☐
3 Secondari ☐
4 Dzidzo yepamusoro ☐

6. Munoita basa rei?

1 Handishandi ☐
2 Ndinozvishandira ☐

3 Ndinoshanda 

7. Vanhu vangani vamunogara navo pamba pamwechete?

1	Ndega	
2	Vatatu	
3	Vana	
4	Vashanu	
5	Kupfuura vashanu	

8. Munotambira marii pamwedzi?

1	Pasi pe $100 USD	
2	Pakati pe 101 – 200 USD	
3	Pakati pe 201 – 300 USD	
4	Pakati pe 301 – 400 USD	
5	Kupfuura 400 USD	

9. Munowanzo gara kupi?

1	Mudhorobha kunogara ruzhinji	
2	Mudhorobha kunogara vepakati nepakati	
3	Mudhorobha kunogara vashoma	
4	Kumaruwa	
5	Kumapurazi	
6	Kumigodhi	

10. Munonwa doro here?

1	Hongu	
2	Kwete	

11. Munoputa fodya here?

1	Hongu	
2	Kwete	

Section B

Bvunzo maererano nekuzvibatsira

Key 1 = Kwete, 2 = Panedzimwe nguva, 3 = Nguva dzose.

		1	2	3
12.	Munokwanisa kutora mishonga yenyu zvakaenderana nguva dzose here?			
13.	Munokwanisa kuchengetedza nguva dzakatarwa dzekunotora mishonga yenyu?			
14.	Munotora mapiritsi enyu pamwechete here nguva dzose?			
15.	Munomedza mapiritsi nguva dzose makatariswa here?			
16.	Makamborega kutora mishonga yenyu here?			
17.	Munogara muine zvekudya zvakakwana here?			

Key 0 = Handibvumi, 1 = Ndinobvuma, 2 = Ndinobvumisisa.

		2	1	0
18.	Munofunga sei pamusoro penzira yemashandisirwo eDOTS pakiriniki pane zvizvi?			
a.	Kugutsikana nemabatirwo			
b.	Kubatsirwa nekasika			
c.	Vashandi vehutano vakasununguka			
d.	Kushomeka kwevashandi			
e.	Mitsara yakareba			
f.	Mishonga inowanika nguva dzose			
g.	Kuvane kiriniki yakapatsana/kudzikisirwa			
h.	Rudzidzo maererano nemarapirwa nenzira yeDOTS			

Key 0 = Kwete, 1 = Panedzimwe nguva, 2 = Nguva dzose.

		1	2	3
19.	Ndezvipi zvinokubatsirai kutora mishonga yenyu mushishandisa chirongwa cheDOTS pane zvizvi?			
a.	Kureba kwenguva yekurapwa			
b.	Huwandu wemapiritsi andinotora nguva yimwe chete			
c.	Kuwanikwa ndichifamba zuva rega			
d.	Kutariswa semwana mudiki zvinodzikisira			
e.	Kushorwa nevose vanoziva kuti une chirwere cherindi			
f.	Kumira kwemaawa akareba usati wabatsirwa			
g.	Kunzwa kurwara zvakanyanya			

	Hongu	Kwete
20. Munogaro tora mishonga yenyu panguva imwechete zuva rega here?		
21. Munotora mapiritsi enyu zuva rega here?	1	0
22. Munogaro atora panguva imwe chete here?		

	Ndizvozvo	Ndizvozvo zvishoma	Handizvo
23. Munogaro bata muromo pamunokosora kana kuhetsura here?			
24. Ndekupi kwamunotora mishonga yenyu pakati pezvizvi?	1	2	3

	Hongu	Kwete
25. Munogaro bata muromo pamunokosora kana kuhetsura here?		

26. Ndekupi kwamunotora mishonga yenyu pakati pezvizvi?

1	Kiriniki	
2	Kumushandi wehutano wemunharaunda	
3	Kumukoti wekumaruwa	
4	Hapana	

Section C Ruzivo maeererano nekurapwa kwechirwere cherurindi

	Hongu	Kwete	Handizivi
27. Munhu ari kurapwa chirwere cherurindi anokwanisa kurega mapiritsi kana			
a. Avakunzwa zviri nani			
b. Kukosora kwamira/asisakosore			

28. Munhu arikurapwa chirwere cherurindi anogona kungorega kutora mishonga asina kupedza zvakataurwa here?

Hongu	Kwete	Handizive

29. Ndekupi kwamonowana ruzivo maererano nechirwere cherurindi nemarapirwo acho?

1	Mukoti	
2	Mushandi weutano wemunharaunda	
3	Zvinyorwa zvemapepa	
4	Zvemasai sai emumhepo	

Zvimwe (tsanangura) ……

Key 0 = Incorrect, 1 = Partially correct, 2 = Correct

	2	1	0
30 Ndeipi zivo yanakapiwa maererano ne kurapwa kwerurindi			
31. Munofunga sei maererano ne zvinetswa maererano nekureba kwenguva yemarapirwo?			
32. Chii chinonzi rurindi?			
33. Rurindi runo konzerwa nei?			
34. Ndezvipi zviratidzo zvayo?			
35. Rurindi runoparariira sei?			
36. Kana mishonga yava pedyo kupera murwere anofanirwa kuita sei			
37. DOTS inoreveyi?			
38. Ndezvipi zvakanakira DOTS pane			
a. Kubata chokwadi kuti zvakataurwa pakurapwa zvaitwa			
b. Kudzikisira kuti mishonga isa kasharare			
c. Kudzikisira matapurirwe echirwere			
39. Ndepapi pekuti munhu anerurindi anogona kurega kutora mapiritsi?			
40. Munhu ane rurindi anofanirwa kutora zvekudya zvakaita sei			
41. Kurapwa kwerurindi kwakareba se?			
a. Kubva pamwedzi mitanhatu kusvika pamwedzi misere			
42. Rurindi runga dzivirirwa sei pane			
1. Dzivirira kugara zvakamanikidzwa			
2. Kurapwa kwe varwere			
3. Kugara pane mhepo yakawanda			

43. ko rurindi rwemapapu runorapika here?

1	Hongu	1

2	Kwete	0

44. Ko rurindi rwe mapapu runorapika here kunyangwe munhu ane utachiona we HIV?

1	Hongu	0
2	Kwete	1

45. Munhu ane rurindi anogona kurega mishonga here kana isisi po?

1	Hongu	0
2	Kwete	1

46. Zvinowanikwa kana munhu asina kuwirirana nemishonga nde

Nyaviri

1	Hongu	1
2	Kwete	0

Chiveve

1	Hongu	1
2	Kwete	0

Ndatenda