UNIVERSITY OF MALAWI

KAMUZU COLLEGE OF NURSING

CONTRIBUTING FACTORS TOWARDS RESURGENCE OF LEPROSY

BY

LATIFA IMAN

A Proposal Submitted in Partial Fulfillment of the Requirement of the Award of Bachelor of Science in Nursing.

Supervised by

Mr.M. Msiska

Date of submission: 18th JULY, 2008.

ABSTRACT.

Leprosy is a leading cause of disability in Malawi. Many people were left with disability due to leprosy. Leprosy needs adequate treatment with MDT for the required period of time.

Many new cases are registered with leprosy into the hospitals. This gives problems to the public as it calls for a lot of money for training and drugs.

The purpose of this study is to assess and evaluate the contributing factors towards resurgence of leprosy. The study specifically aims at determining the numbers of new cases registered at Nkhota-kota District since November 2007, to find out if health workers know on the prevalence of leprosy disease condition, to assess the knowledge level of health workers on management of leprosy and to find out drug compliance of patient with leprosy

A quantitative design will be used to meet these objectives.

The study will involve 30 subjects who will consist of health workers and client with leprosy. The study will be conducted at Nkhota-kota District Hospital.

A questionnaire will be used to collect data from the patients and health workers

Data will be coded and analyzed manually using descriptive statistics. The responses will be written down and similar responses will be counted by tallying then they will be summed up.

ACKNOWLEDGEMENT

Firstly, I thank almighty God for giving me ability to write this research proposal. Appreciation is also granted to a lot of people so numerous for their support to ensure that help rendered tirelessly to me that this research proposal comes to completion.

I acknowledge with gratitude, the support, guidance and lectures of my supervisor, Mr. M. Msiska.

My special thanks should also go to my parents Mr. and Mrs. Iman, my brother Mr. khan Iman and my sisters for their material and financial support.

May God bless you all!

GLOSSARY

Case of leprosy	is a person with clinical signs of leprosy, who requires chemotherapy
Defaulter	an individual who fails to complete treatment within the prescribed time-frame.
Disability	a broad term covering any impairment, activity limitation or participation restriction affecting a person.
MDT	multi-drug therapy.
Multibacillary(MB)	A leprosy patient with six or more skin patches.
Nerve function	a loss of normal nerve functioning, demonstrated by loss of impairment or loss of sensation (loss of feeling or numbness) in the skin served.
New case	a case of leprosy who has never been previously treated with anti-leprosy chemotherapy.
Paucibacillary (PB)	A leprosy patient with up to five skin patches.
Reaction	the sudden appearance of symptoms and signs of inflammation in the skin of a person with leprosy.

Relapse	the re-occurrence of the disease at any time after the completion of a full course of treatment.
RFT	release from treatment: this occurs when treatment with MDT has been successfully completed.

TABLE OF CONTENTS

CONTENTS **PAGE**

Chapter five

Chapter six

Chapter seven

APPENDICES

1.0 INTRODUCTION

Leprosy is a chronic bacterial disease caused by mycobacterium leprae. It affects primarily the skin as well as peripheral nerves and the mucosa (lining) of the upper airway (Center for Disease Control and Prevention, 1997)

The exact mode of transmission for leprosy has never been determined but prolonged contact with an infected person appears to be the main mode of transmission (Center for Disease Control and Prevention 1997).

Leprosy can be classified based on clinical manifestations and smear results. In the classification based on skin smears, patients showing negative smears at all sites are grouped as paucibacillary leprosy (PB), while those showing positive smear at any site are grouped as having multibacillry leprosy (MB) (Guide to Medical Resources, 1999). However, in practice most programmes use clinical criteria for classifying and deciding the appropriate treatment regimen for individual patients, particularly in view of non-availability or non-dependability of the skin smear services. The clinical system of classification for the purpose of treatment includes the use of number of skin lesions and nerve involved as the basis for grouping leprosy patients into multibacillary (MB) and paucibacillary (PB) leprosy. While classifying leprosy, it is particularly important to ensure that patients with multibacillry disease are not treated with the regimen for the paucibacillary form of the disease. (Guide to Medical Resources, 1999)

Leprosy is treated with mult drug therapy that is the combination of rifampicin, clofazimine and dapsone for multibacillary leprosy patients, rifampicin and dapsone for paucibacillary leprosy patients (Guide to Medical Resources, 1999) . Among these, rifampicin is the most important ant leprosy drug and therefore is included in the treatment of both types of leprosy. Treatment of leprosy with only one ant leprosy drug will always result in development resistance to that drug. Treatment with dapsone or any other ant leprosy drug used as mono therapy should be considered as unethical practice. Treatment for multibacillry is taken for 12 months while for paucibacillary is taken for 6 months.

1.1 BACKGROUND

Leprosy is an ancient disease and is even mentioned in the Old Testament of the Bible. However, these biblical descriptions do not resemble leprosy, as we know it today. It is likely that the term referred to a number of different skin ailments that were considered to be a punishment from God for sin and that marked the sufferer as unclean. Authentic descriptions of leprosy are found in documents from India dating back to 600 BC (Leprosy-MSN Encarta.htm).

Leprosy probably originated in India and was distributed throughout the world by various travelers, including Roman Legionnaires, Crusaders, Spanish conquistadors, Asian seafarers, European colonists, and Arab, African, and American slave traders. Some historians believe that Alexander the Great's troops brought leprosy from India to Europe during the 300s BC. In Western Europe, the prevalence of leprosy peaked between AD 1100 and 1300, then began to decline as living conditions improved. As recently as 1900 leprosy could be found in northern Europe. Today the disease is found primarily in tropical areas. (Leprosy-MSN Encarta.htm). It once affected every continent and it has left behind a terrifying image in history and human memory of mutilation, rejection and exclusion from society (Leprosy-MSN Encarta.htm).

Mycobacterium leprae was first identified as the cause of leprosy in 1873 by Gerhard Henrik Armauer Hansen, a Norwegian physician. However, treatment for leprosy only appeared in the late 1940s with the introduction of dapsone, and its derivatives. Leprosy bacilli resistant to dapsone gradually appeared and became widespread. (Leprosy-Wikipedia, the free encyclopedia.htm).

According to the World Health Organization (WHO), in 1985 there were 5.4 million registered cases of leprosy and an estimated 10 to 12 million total cases worldwide. By 2000, there were only 680,000 registered cases and an estimated 1.6 million total cases of leprosy worldwide. Fewer than 7,000 registered cases of leprosy currently exist in the United States. Each year some 300 new cases of leprosy are identified in the United States. The vast majority of these patients are immigrants who acquired the disease in their home countries. (Leprosy-MSN encarta.htm).

In 1991 WHO launched a leprosy elimination program to provide multidrug therapy to leprosy patients all over the world. The goal of the program was to reduce the prevalence of leprosy to 1 in 10,000 people in 122 countries while in 1995 there were an estimated 2

million cases in the world, most of them concentrated in Southeast Asia, Africa and the Americans. Among them 1.3 million are registered for treatment of whom 1 million are treated with multidrug therapy (MDT). The number of new cases detected worldwide each year is about half a million. (Guide to Medical Resources, 1999). By 1998, the goal had been met in 90 of those countries. However, new leprosy cases have continued to emerge at a rate of 1.4 cases per 10,000 people. The disease has proven difficult to eliminate for several reasons. One reason is that scientists do not understand how the bacterium is transmitted from person to person. Also, scientists do not know how to identify people who are infected but have not yet developed the disease. Efforts to eliminate leprosy are also hampered by the stigma still attached to the disease: Many patients are reluctant to seek treatment for fear of being abandoned by their family and ostracized by society in general. (Leprosy-MSN Encarta.htm).

LEPRA Health in Action started in 1924 as the British Empire Leprosy Relief Association, a medical organisation concentrating on outpatient work and research into leprosy. In the 1960s, LEPRA began work in Malawi supported by fundraising appeals in the UK media, expanding overseas work in the 1970s to support a further 11 countries. The LEPRA Society of India, formed in 1989, is now its largest programme, running projects and providing support to Government and local NGOs. By 1995, LEPRA India had cured 100,000 patients. Support for State leprosy programmes started in Brazil in 1993, Mozambique in 1998, and a direct programme in Bangladesh started in 2000. In 1997, LEPRA was able to transfer responsibility for the National Leprosy Control Programme in Malawi to the Government, after reducing the number of registered patients from around 30,000 in 1965 to less than a thousand by 1996 and Malawi was the first country in the world to wipe out leprosy and has achieved the fight in five years ahead of scheduled. Royal patronage has always been important to LEPRA. In the 1950s, King George VI became the first royal sponsor of LEPRA, and in 1999, LEPRA celebrated its 75th Anniversary in the presence of Queen Elizabeth II. LEPRA was elected as a Member of ILEP in 1976. programmes@lepra.org.uk www.lepra.org.uk

1.2 STATEMENT OF THE PROBLEM

Although leprosy is no longer considered a major public health problem in Malawi because the elimination target was reached at national level in 1995, a large number of new cases continue to be detected each year. In addition, stigma and discrimination are

also a problem. This is regrettable since the disease can be diagnosed and treated successfully with Antibiotics (MMWR 1997) if an individual is diagnosed, given treatment and the treatment is taken in the right way and course finished, recovery takes place.

In this study will investigate the factors that contribute to the resurgence of leprosy in Nkhota-kota in Malawi. This will in the end guide in the proper management of these patients and on knowledge of preventive measures of leprosy.

1.3 SIGNIFICACE OF THE STUDY

Information obtained from this study will help the Ministry of health in formulating policies and guidelines on the resurgence of leprosy in Malawi. The information will help also Malawians have knowledge on the factors associated with resurgence of leprosy in Malawi especially Nkhota-kota area and to identify areas that are missed when treating or diagnosing patients with leprosy and therefore it will be possible to tackle the problem effectively. The findings will also assist in identifying other areas of further study.

1.4 OBJECTIVES OF THE STUDY

GENERAL OBJECTIVES

To explore the contributing factors towards resurgence of leprosy in Nkhota-kota.

SPECIFIC OBJECTIVE S

To determine the number of new cases of leprosy at Nkhota-kota District Hospital since November 2007.

To find out if health workers know on prevalence of disease condition.

To assess the knowledge level of health workers on management of leprosy

To find out drug compliance of patients with leprosy.

2.0 LITERITURE REVIEW

The approaches to literature review that have been utilized are, the identification and search for information on a topic with a view to developing a comprehensive picture of the state of knowledge on the topic under discussion, and also a search of information on sections in written reports summarized on the research problem.

2.1 RESEARCH STUDIES DONE GLOBALLY

Since ancient times, leprosy has been regarded by the community as a contagious, mutilating and incurable disease. There are many countries in Asia, Africa and Latin America with a significant number of leprosy cases. As of 1995 around 2400 000 people live in countries where the prevalence of leprosy is more than one case per 10 000 population (Guide to Medical Resources 1999). It is estimated that in 1995 there were between one and two million people visibly and irreversibly disabled due to past and present leprosy that require to be cared for by the community in which they live.

When M.leprae was discovered by G.A. Hansen in 1873 it was the first bacterium to be identified as causing disease in man. However, treatment for leprosy only appeared in the late 1940s with the introduction of dapsone and its derivatives. Leprosy bacilli resistant to dapsone gradually appeared and became widespread. (Guide to Medical Resources, 1999).

In 1995, there were an estimated 2million cases in the world, most of them concentrated in Southeast Asia, Africa and the Americas. Among them 1.3 million are registered for treatment of which 1 million are treated with multi drug therapy (MDT). The number of new cases detected world wide each year is about half a million.

2.1.1 DEPRESSION STATUS OF LEPROSY PATIENTS

Stigmatization by the general population and their negative attitudes towards leprosy negatively influences patients' mental health, and so too does patients' perception of that stigma. A study was done to assess the depressive status of leprosy patients, the

perception of that stigma, and its association with their depressive status in Dhaka, Bangladesh. The results showed that among 140 patients (subjects) 123 representing 87.9% had felt isolation from their family, 95 (67.9%) from relatives or friends and 96 (68.5%) from society. 111 (85.0%) patient had an experience of being hurt by their family's negative attitude against leprosy. (Leprosy Review, 2004).

2.1.2 ELIMINATION OF LEPROSY

Over the past years, there had been an increasing movement towards strategies for eliminating leprosy worldwide. The annual number of leprosy cases detected globally each year has not declined since 1985, yet, in May 2001 it was announced that leprosy was eliminated as a public health problem at a global level.

Despite intensive efforts in many developing countries to eliminate Hansens disease, it continues to be a public health problem that can leave physical, emotional and socioeconomic sequelae. The available evidence strongly suggests that even after the elimination target of one case per 10 000 residents is achieved, a significant Hansen disease problem will continue to exist in many countries for the foreseeable future and the control efforts undertaken by those national programmes should therefore be sustained . (Leprosy Review 2007)

Brazil represent s one of the countries with the highest burden worldwide. Although the prevalence rate has not been reduced from 16 to 1.7/10 000 between 1985 and 2004, the decline incidence has not occurred at a similar pace. In fact, the new detection rate has increased from 1.3 to 2.8 per 10 000 over this same period. Nevertheless, there is discrepancy in the regional distribution of these cases throughout the country. (Leprosy Review, 2007).

In 2004, the highest detection rate was reported in the northern region (7.6/10 000), followed by the mid-western (6.5/10,000), (northeastern (3.5/10 00) and southeastern (1.5/10 000) region whereas in the south of Brazil the disease is considerably less prevalent. (Leprosy Review, 2007)

2.1.3 RELAPSE OF MULTIBACILLARY LEPROSY

An investigative study was done in southwest of China on the relapse rate among multibacillary leprosy patients treated with 24months of MDT. A detailed questionnaire was designed to collect data on relapse among MB patients who completed 2 years of the WHO/MB regimen, from 1989 to 2000. The data about 2517multibacillary leprosy patients in 27 countries in the southwest of China were collected. Among 2517 MB leprosy patients, 235 patients died or were lost to follow-up and 2374 were followed up for more than 3 years after completion of MDT. Five patients with relapse were identified with an accumulated relapse rate of 0.21/1000 person-years. Their initial BIs ranged from 1.8 to 5. The patient with relapse occurred 48-158 months after the completion of MDT. The relapse rate of MB patients treated with 24months of the WHO/MB regimen was observed to be very low after long-term follow-up. (J. Shen et al, 2006).

2.1.4 PATTERNS OF HEALTH SEEKING BEHAVIOUR AMONGST LEPROSY

A study was done in Ethiopia on patterns of health seeking behavior of patients with leprosy to determine factors influencing the early reporting of leprosy patients to modern treatment units.

The results showed that more than 77% of the cases waited for longer than 1 year before going to a leprosy clinic, whereas only 60% of the controls had waited over one year. On finding their first symptoms, 68% of the cases and 23% of the controls went to traditional healers. (Amenu, Nash, Tamiru and Byass, 2000)

The study showed that many people, particularly in developing countries, have still not changed their beliefs and attitudes towards the disease and are reluctant to go to the clinics for examination even after being diagnosed. Many have difficulty in accepting the disease due to distance, age, religion, sources of advice, stigma and discrimination. (Amenu, Nash, Tamiru and Byass, 2000)

2.1.5 FACTORS THAT PREDISPOSE PEOPLE TO LEPROSY

Genetics

A study was done on genetics of host response in leprosy. Leprosy outcomes are influenced by the genetic background of the host and environmental features like nutritional status, BCG vaccination and exposition rates for mycobacterium leprae or other mycobacteria even though several clinical and epidemiological evidences suggest that leprosy has genetic influence. The studies have shown that genetics have pathways leading to leprosy outcome. There is confirmation of the role the immunological response in protection/susceptibility of the disease plays. (Leprosy Review, 2004)

Knowledge of health workers

A study on health workers knowledge and practices regarding leprosy care and control at primary care was done in South Africa in Dec 2002 and 2003 January. The results of the study reveal that the primary health care workers have a general lack of basic clinical knowledge of leprosy, and a very low level of practical involvement in leprosy work at the primary health care clinics in the area. A majority of the primary health care workers expressed the desire for training on leprosy, and the willingness to provide care to leprosy patients at the primary health care clinics. (Ukpe, 2006)

Another study was done on leprosy and ocular problem in Nepal in the era of multi drug therapy to determine the prevalence of ocular complications among leprosy patients on multi drug therapy and those released from multi drug treatment. The results showed that majority 72% was receiving treatment for multi bacillary leprosy, 14% belonged to post treatment multi bacillary and pauci bacillary groups. Ocular involvement was found in 57% of patients. In the multibacillary group, 55% had ocular involvement, which was more than double that found in the paucibacillary group 25%, although the findings were not statistically significant(p=185). Among patients with ocular complications, 48% had visual disability and another 45% had threatened vision, 9% met world health organization guidelines for blindness. Uteitis and its complications and visual disability

are high among leprosy patients in Nepal even after completing multi drug therapy. (Nepal, Shrestha, 1997).

A cohort study was done on newly diagnosed as having leprosy and their contacts. The results showed that contacts of patients with leprosy have a higher risk of developing leprosy than does the general population. Several risk factors besides being a contact per se have been suggested, such as the type of leprosy of the index patient, the age and sex of the contact, and the genetic and physical distance of the contact to the patient. In short, the higher age showed an increased risk, with a bimodal distribution. Contacts of patients with paucibacillary leprosy with 2-5 lesions and those with paucibacillary leprosy had a higher risk than did contacts of patients with single-lesion paucibacillary leprosy. The core household group had a higher risk than other contacts living under the same roof and next-door neighbor who again had a higher risk than neighbor of neighbors. A close genetic relationship indicated an increased risk when blood-related children, parents and siblings were pooled together. (F. Johannes Meet et al, 2006)

2.1.6 PREGNANCY AND LEPROSY

The prospective cohort study was done to identify the relationship between pregnancy and leprosy. The results showed that type one (reversal) reactions were particularly likely to occur during the post partum. This temporal association was also present in overt and silent neuritis. Type two (erythema nodosum leprosum) reactions occur throughout pregnancy and during lactation, and may be severe and recurrent. No prospective, controlled studies were found that documented the complications of pregnancy in women treated with multi drug therapy regimens. This study highlights the need for such studies, with appropriate controls, on women throughout pregnancy and lactation so that risk factors for reaction and neuritis during pregnancy can be identified and quantified. (D.N. Lockwood, 1999)

2.2 STUDIES DONE IN MALAWI

2.2.1 Vaccine trial on leprosy

In the trial conducted between 1983 and 1991 the combination of live BCG plus heat killed mycobacterium leprae was employed to reverse the putative deficiency of the t-cell mediated response to M. leprae among the susceptible individuals in the community, the susceptible being defined by their failure to respond to M.leprae soluble antigen applied as a skin test, live BCG alone was employed as a control vaccine.

In Venezuela, the same study was done and yielded almost identical conclusions. BCG was effective and repeated doses of BCG conferred additional protection though in areas in which infection with HIV is prevalent vaccination with BCG may increase the risk of tuberculosis. In addition, the administration of live BCG to HIV-infected individuals exposes them to the risk of disseminated BCG infection. (Gupte, 1999).

2. 2.2 contacts as risk factors of leprosy

A similar study was done in Bangladesh on contact as a risk factors of leprosy. Data on household and dwelling contact with known leprosy cases were available on more than 80,000 initially disease-free individuals followed up during the 1980s in a rural district of northern Malawi. A total of 331 new cases of leprosy were diagnosed among them. Individuals recorded as living in household or dwelling contact with multibacillary patients at the start of follow-up were at approximately five- to eightfold increased risk of leprosy, respectively, compared with individuals not living in such households or dwellings. Individuals living in household or dwelling contact with paucibacillary cases were both at approximately twofold increased risk. The higher risk associated with multibacillary contact and the fact that dwelling contact entailed a greater risk than household contact if the association was with multibacillary, but not with paucibacillary, disease suggest that paucibacillary cases may not themselves be sources of transmission, but rather just markers that a household has had contact with some (outside) source of infection. (J. Munthali et al, 1993)

A retrospective cross-sectional study was conducted at Nkhota-kota District hospital on profile of leprosy cases. In total 526 cases of leprosy were identified from the records and the results showed that the prevalence rates gradually increased from 0.998 per 10,000 cases in 1992 to 3.39 cases per 10,000 in 1995. There was however, a gradual decline of prevalence rates from 1997/1998 that had 3.17 cases per 10,000 to 1.3 cases per 10,000 in 2001. In 1996 registered 2.34 cases per 10,000. Fifty-seven cases (10.8%) were found with children of the age of 14 or below and 469 (89.2%) cases were of adults. Paucibacillary leprosy presented with more cases than multibacillary leprosy ($p < 0.0000001$). There were 80 (15.2%) cases of multibacillary leprosy compared to 446 (84.8%) cases of paucibacillary leprosy. In addition, more males were affected by multibacillary leprosy than females ($p < 0.0001$) and females were more affected by paucibacillary leprosy ($p < 0.01$) than males. The results show that paucibacillary leprosy though minor in Malawi can become endemic, as paucibacillary leprosy is a reflection of leprosy contacts in the population.(J.E. Chisi et al, 2003).

Data are presented from the Karonga District in Northern Malawi on the long-term follow up of 277 leprosy suspects who were not given ant leprosy treatment or kept on active surveillance. Individuals who were started on ant leprosy treatment within a year after leprosy was first suspected, usually based on histopathology results, and are excluded from this analysis, because their active surveillance would not usually cause an organizational or financial problem for leprosy control projects. After an average follow-up period of 4.5 years 35 of the 277 suspects included in the analysis (13%) were diagnosed with what we consider to be completely clear (unequivocal) leprosy, and 3 of the 35 had developed disabilities. In 211/277 (76%) all signs of leprosy had disappeared completely.(P.J Fine et al, 1993). Comparing clinical certainties at first and last examinations and comparing clinical with histopathological certainties at last examinations it is estimated that up to 50% of the 35 cases of unequivocal leprosy which 'arose' in this group were attributable to misdiagnosis at the 1st or 2nd examination rather than to genuine progression of the disease. This estimate is compatible with an overall sensitivity of 90% and an overall specificity of 95% at each examination. Leprosy suspects with 1 cardinal sign of leprosy, either a typical lesion without loss of sensation, or loss of sensation in an otherwise untypical lesion, should be considered a high-risk group in that approximately 25% of such suspects (19/78) were later found with unequivocal leprosy. (P.E. Fine et al, 1993)

2.3 SUMMARY OF LITERITURE REVIEW

From the reviewed literature, no specific study was found that specifically looked at the factors that contribute to resurgence of leprosy in Nkhota-kota.

3.0 METHODOLOGY

3.1 INTRODUCTION

Methodology refers to the plan that describes how, when and where data shall be collected and analyzed. (Parahoo, 1997). This chapter, therefore, describes the design of study, then the method of data collection, the setting and sample and how data shall be analyzed

3.2 RESEARCH DESIGN.

The study is of quantitative design. Quantitative research is a formal, objective, systematic process to describe test relationship, examine cause, and effect interactions among variables (Burns and Groove, 1997)

This design has been chosen because of its level of accuracy and objectivity through measures of central tendency its ability to describe the actual situation.

3.3 STUDY SETTING

A setting is a physical location and condition in which data collection takes place in a study. (Polit and Hungler, 1995). The setting of this study will be at Nkhota-kota District. The setting has been chosen because it has a lot of patients having the problem of leprosy.

3.4 SAMPLING

Sampling involves choosing part of the entire population from which the study is to focus, so that they represent the rest. The research will choose a group of health workers and leprosy patients. This is the group of subjects that fall within the population of interest to come up with factors contributing to resurgence of leprosy in Nkhota-kota. The patients will be identified using records with assistance from the dermatology officer of Nkhotakota District Hospital.

3.5 SAMPLE SIZE

A total of 30 subjects will be used and from these 30 subjects , 15 will be patients and 15 will be health workers. They will be selected using convenience sampling, which is the selection of the most readily available persons as subjects for the study. It is also known as accidental sampling.

3.6 DATA COLLECTION INSTRUMENT

The study intends to collect data using questionnaire (appendix A) in which most questions shall be closed ended with only a few open ended questions. A questinnaire will ensure truthfulness since each subject will be handled separately.

3.7 PRE-TESTING

The questionnaire, which has been developed by the researcher to be used as a data collection tool, will be tested for its validity. The questionnaire will be tested on three patients who will come to lepra clinic (Lilongwe) and two health workers.

3.8 DATA ANALYSIS

After collecting the data, it will be analyzed manually using descriptive statistics. The responses will be written down and similar responses will be counted by tallying. Then the responses will be summed up.

3.9 ETHICAL CONSIDERATIONS

It is very vital in every research study to consider all ethical implications that may be brought up. In considering the same, this study shall utilize informed consent forms to seek permission from all subjects before they participate in the study and in order to protect the rights of the participants, permission will be sought from the relevant authorities such as: the Ministry of Health, the District Nursing Officer/ District Health Officer of Nkhota-kota District hospital and also from each participant. Each subject will be given an explanation about nature and purpose of the study

The subjects will be assured about their anonymity and will be allowed to pull out of the study at anytime should they wish to do so. Code numbers will be used instead of real names in order to guarantee the participants anonymity.

4.0 TIME TABLE

Timetable is a graphic presentation of how long each activity of a study will take. The mapping of the study activities has been shown in the table below:

MONTHS	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Research topic development	X	X									
Research proposal development			X	X	X						
Clearance						X					
Pilot study							X				
Data collection								X			
Data analysis								X	X		
Compiling research project									X	X	
Binding and submitting dissertation										X	X

5.0 BUDGET

ITEM		COST	TOTAL K T
Stationary			
3 rims of papers	@	K750 each	2250 00
3 ball point pens	@	K20 each	60 00
3 lead pencils	@	K15 each	45 00
1 tippex	@	K400 each	400 00
5 standard envelops	@	K20 each	100 00
1 Folder	@	K350 each	350 00
Transport and telephone bills			15000 00
Typing and photocopying			5000 00
Printing and binding			
3 proposals	@	K500 each	1500 00
4 dissertations	@	K1500 each	6000 00
Internet			500 00
Other items			2000 00
Total			33,105 00

6.0 REFERENCES

Amenu, A .Nash, J. Tamiru, T Byass, P.(2000) Patterns of Health Seeking Behavior Amongst Leprosy Patients in Former Shoa Province, Ethiopia. Ethiopian Journal of Health Development: 14(1): 43-47. Retrieved on May 22, 2008 from http://www.popline.org/docs/1394/16338.htm.

Burns, N. & Grove, S.K. (1997). The Practice of Nursing Research: Conduct Critique and Utilization. Philadelphia. W.B. Sunders Company.

Britton, W.J. & Lockwood, D.N. (2004). Leprosy. Lancet 363: 1209-1219

Center for Disease Control and Prevention, 1997. Retrieved on June 3, 2008 from http://www.hrsa.gov/hansens.

Chisi, J.E et al. (2003). Leprosy in Nkhota-kota District. East African Medical Journal: 80(12): 635-639. Retrieved on May 7, 2008 from http://www.ajol.info/viewarticle.php?.id=10764.

Fine, P.E. (1993). Long-term Active Surveillance of Leprosy Suspects. Leprosy Review; 64(1): 24-36. Retrieved on June 10, 2008 from http://www.biomedexperts.com/profile.

Guide to medical resources, 1999. Retrieved on May 23, 2008 from http://www.MedGuide.org.Zm

Gupte, M.D. (1999).Vaccine trials in leprosy- Venezuela, Malawi and India. International Journal of Leprosy and Other Mycobacterial Diseases. Retrieved on May 22, 2008 from http://wwwfindarticles.com/p/articles/mi-qa3754/is-199912/ai-n

Johannes, F. et al. (2006). Effectiveness of Single Dose Rifampicin in Preventing Leprosy in Close Contacts of Patients with Newly Diagnosed Leprosy. Retrieved on May 27, 2008 from http://www.bjm.com/cgi/content/full/336/7647/761

Leprosy-Wikipedia, the Free Encyclopedia, htm. Retrieved on June 3, 2008 from http://www.en.wikipedia.org//Wiki/Leprosy.

Leprosy-MSN Encarta. Retrieved on May 28, 2008 From http://www.Encarta.MSN.Com.

Leprosy Review, (1993). Retrieved on May 6, 2008 from http://www.lepra.org.uk

Leprosy Review, (2004). Retrieved on May 6, 2008 from http://www.lepra.org.uk

Leprosy Review, (2007). Retrieved on May 7, 2008 from http://www.lepra.org.uk

Lockwood, D.N. (1999). Pregnancy and leprosy. A comprehensive literature review. International journal of leprosy; 67(1):6-12 retrieved on may, 28 2008 from http://www.anaisdedermatologia.org.br/artigo-en-php?artigo-id=115

Nepal, B.& Shrestha, U. Ocular Findings in Leprosy Patients in Nepal in the Era of MultdrugTherapy American Journal of Ophthalmology;137:888-892.

Parahoo, K.(1997). Nursing Research: Principles, Process and Issues. Macmillan. London.

Pilot, D.F & Hungler, B.F.(1995). Essentials of Nursing Research Methods: Appraisal and Utilization. Philadelphia. Lippncott.

Shen, J. et al. (2006). Relapse in MB Leprosy Patients Treated with 24 months of MDT in southwest China. Leprosy Review; 77(3):219-224. retrieved on June 3, 2008 from http://www.ncb.nlm.gov/pubmed/17/72002.

APPENDEX A:QUESTION AND INTERVIEW GUIDE

INTERVIEW GUIDE FOR THE PATIENTS

Part 1: Demographic Data

1. How old are you? (a) 10-24 years [ ]
   (b) 25-34 years [ ]
   (c) 35-44 years [ ]
   (d) 45-54 years [ ]
   (e) 55-64 years [ ]
   others (specify) .....

2. Sex female [ ] male [ ]

3. Occupation .....

4. Educational level (a) none [ ]
   (b) Primary [ ]
   (c) secondary [ ]
   (d) others (specify) .....

Part 2: Drug Compliance of Patient

5. Who supervised you when you are taking treatment ?
   (a) Guardians [ ]
   (b) None [ ]

6. Sources of information about your condition and treatment
   (a) Health workers [ ]
   (b) Guardians [ ]

Others (specify) .....

7. (a) How far is it from your home to the hospital or health center?

.....

(b) What is the relationship with health workers?

.....

(c) What problem did you face with the length of treatment?

.....

8. Do you happen to find no drugs at the hospital?.....

.....

9. Have you happen to forget to take drugs one day? .....

.....

10. What drugs do you take? .....

11. How many tablets do you take? .....

12. How do you take (frequency)? .....

11. What are the side effects of the drugs? .....

.....

12. Did you see any improvement in symptoms of leprosy? (yes) [ ] (no) [ ]

QUESTION GUIDE FOR HEALTH WORKERS

This questionnaire is part of the project. It is entirely confidential. Please take a few moments to fill it. Thank you.

Part 1: Demographic Data

1. How old are you? Under 25 [ ] 26-40 [ ] 41 or above [ ]

2. Occupation:

Student [ ]

Nurse [ ]

Doctor [ ]

Others .....

3. Sex female [ ] male [ ]

Part 2: Knowledge Level Data

4. Have you ever heard of a disease called leprosy? Yes [ ] No [ ]

4 (a) if yes where? .....

5. Has anyone you know ever suffered from leprosy?

A friend [ ]

A family member [ ]

A work colleague [ ]

A patient [ ]

Others (specify) .....

6. Is the condition common in your are or district you are working?

Yes [ ] No [ ] Don't know [ ]

7. What do you think causes leprosy? .....

.....

8. How might you catch leprosy? .....

.....

9. Which part of the body can leprosy affect? .....

.....

10. Can leprosy disease be cured?

Always [ ] Never [ ] Sometimes [ ]

Don't know [ ]

10 (a) if always name specific drugs for leprosy include dose, route, frequency and duration.....

.....

11. What are the complications of leprosy if left untreated? .....

.....

(a) Do the complications get better? Yes [ ] No [ ]

12. Are you able to diagnose leprosy just by inspection?

Yes [ ] No [ ] Do not know [ ].

If yes what are the signs and symptoms of leprosy?.....

.....

13. Do you think people with leprosy should live apart from other people?

Yes [ ] No [ ] Don't know [ ]

If not, why not? .....

14. Would you treat/care someone with leprosy?

Yes [ ] No [ ] Don't know [ ]

If not, why not? .....

.....

15. What do you think has caused the resurgence/recurrence of leprosy in your area?

.....

.....

.....

Part 3: Prevalence of the Disease

16. Have you cared/nursed someone with leprosy? Yes [ ] No [ ]

    If yes how many.....

17. What is the prevalence rate of leprosy in your working area? .....

    .....

18. Do leprosy patients attend the clinic for treatment?

    Yes [ ] No [ ] Not sure [ ]

APPENDEX B: LETTERS

University of Malawi,
Kamuzu college of Nursing,
Private bag 1,
Lilongwe.

Nkhota-kota District Health Office,
Nkhota-kota District Hospital,
Po Box 46,
Nkhota-kota.

Att :The District Health Officer

Dear sir,

APPLICATION FOR PERMISSION TO CONDUCT A STUDY AT YOUR DISTRICT HOSPITAL.

I am a fourth year student at Kamuzu College of Nursing pursuing a Bachelor of Science Degree in Nursing. In partial fulfillment of my course I am required to carry out a research study. My topic of study is : factors that contribute tom resurgence of leprosy at Nkhota-kota District.

I write to seek permission to conduct the research at your hospital.

Your favorable consideration on this issue will be greatly appreciated.

Yours faithfully,

LATIFA IMAN

University of Malawi,
Kamuzu college of Nursing,
Private bag 1,
Lilongwe.

The secretary,
Ministry of health and population,
Po Box 30377,
Lilongwe 3.

Dear Sir,

SEEKING NATIONAL CLEARANCE TOM CONDUCT A RESEARCH STUDY

I am a fourth year student at Kamuzu College of Nursing pursuing a Bachelor of Science Degree in Nursing. In partial fulfillment of my course, I am required to carry out a research study. My topic of study is : factors that contribute tom resurgence of leprosy at Nkhotakota District.

I write to seek permission to conduct the research at one of the institution under your ministry.

Your favorable consideration on this issue will be greatly appreciated.

Yours faithfully,

LATIFA IMAN

APPENDEX C: CONSENT LETTER

University of Malawi,
Kamuzu College of Nursing,
Private bag 1,
Lilongwe.

Dear participant,

I write to seek your consent to participate in a study. I am a fourth year student at Kamuzu College of Nursing pursuing a Bachelor of Science Degree in Nursing. In partial fulfillment of the course, I am required to conduct a research study. The title of the study is: factors that contribute to resurgence of leprosy at Nkhotakota District.

You will be required to answer questions from the interviewer. The study has no risks attached to it and be assured that it shall never cause any discomfort. You should be informed that incentives will not be offered since the study will not consume any of your resources apart from the minutes that you will spare answer the questions. The information given will be treated as confidential and there will be no way of the information you give being identified with you. The data will help produce valid and reliable information with which will help to come with strategies of eradicating leprosy.

Participation in the study is NOT compulsory and withdrawing from it after you have already consented will result in NO penalty.

I hereby give consent to participate in the study upon fully understanding its implication.

Signature of participant:..... Date :.....

Signature of the researcher: ..... Date: .....

LATIFA IMAN

(principal investigator)

APPENDEX D: CHIVOMEROZO

University of Malawi,
Kamuzu College of Nursing,
Private bag 1,
Lilongwe.

Kwa otenga mbali

Ndalemba kalatayi ngati chilolezo cho kupemphani kuti mukhale nawo mukafukufuku. Ine ndine ophunzira wa ku sukulu ya ukachenjede ya anamwino ya Kamuzu College of Nursing ndipo ndili muchaka chachinayi ndipo ndikuyenera kupanga kafukufuku. Ndili kupanga kafukufuku wa: zinthu zomwe zikupangitsa kuti matenda a khate ayambenso m'boma la Nkhotakota.

Mukafukufuku ameneyu inu mudzapephedwa kuti muyankhe mafunso amene mufunsidwe. Palibe zovuta zilizonse zomwe zili mukafukufuku ameneyu ndiponso kafukufukuyu sazadzetsa vuto linalilonse. Mukafukufuku tisunga chinsinsi ndiponso tibisa zokambilana zanthu zones.

Zotsatila zizathandiza kuti tipeze njira yomwe tingatsate kuti tithetse matenda amenewa a khate.

Kutenga mbali mukafukufuku ameneyu sikokakamiza ayi ndiponso kutuluka mutasainakale simudzalandila chilango chilichonse.

Ndalolera kukhala mukafukufuku wanu pambuyo pomvetsetsa bwinobwino za kafukufuku ameneyu..

Sayinani apa:..... Tsiku :.....

Posayina ochita kafukufuku:..... Tsiku:.....

LATIFA IMAN