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IMPACTS OF PERCEIVED SEVERITY OF SICKNESS
AND BENEFIT OF TREATMENT ON COMPLIANCE OF
LEPROSY PATIENTS IN SOKOTO STATE

BY

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A B S T R A C T

The purpose of this study was to investigate the impacts of perceived severity of sickness and benefit of treatment in relation to compliance to treatment of leprosy patients in Sokoto State. The study also looked into the interactive effects of perceived severity of sickness and benefit of treatment on compliance of the various groups of leprosy patients in the state.

Nine sub-hypotheses were stated to guide the study towards finding an answer to the main hypothesis.

Using the cluster sampling technique, 952 randomly selected subjects from Argungu, Sokoto and Zuru administrative divisions of Sokoto State were used for the study.

The main research instrument for the study was the structured interview. The interviews were conducted by the researcher with the aid of six selected and trained assistants.

The chi-square (χ^2) was used to test the sub-hypotheses at a significant level of 0.05. The χ^2 was however corroborated by the descriptive statistics (percentages).

The findings of the study revealed that the higher the level of perceived severity of sickness, the lower the compliance rate. However, with regards to perceived benefit

of treatment, the higher the perception, the higher the compliance rate. The percentages for compliance in the case of perceived severity of sickness were 40.4% for those who perceived leprosy very severe, 49.9% and 54.9% for those who perceived leprosy moderately severe and not severe respectively. The percentages for compliance in the case of perceived benefit of treatment were 90.6%, 73.8% and 19% for those who perceived treatment very beneficial, somewhat beneficial and not beneficial respectively.

The result showed that those who perceived treatment very beneficial complied to treatment more than those who perceived the disease very severe. Similarly, those who perceived treatment somewhat beneficial were better compliers than those who perceived the disease moderately severe. However, those who perceived the disease not severe were better compliers than those who perceived treatment not beneficial.

Based upon the findings of this study, the ~~researcher~~ recommended among other things, a wide and effective public enlightenment on the various aspects of leprosy and people should be made to realise that leprosy is curable, it is not a very severe disease, it doesn't kill it only cripples the victim if treatment is delayed.

DEDICATION

To God for his loving kindness

To my father, late Deacon James O. Adamu, whose
ambition was to see me achieve this intellectual
height in his lifetime

To my dear brother, late Timothy Adamu

To my brother-in-law, late Dr. Michael Isah Achor

All of whom died while I was pursuing this program

May their souls rest in perfect peace - Amin.

To my mother, Mrs. Mary Adamu for her love

To my wife, Mary for her love and patience

To Ezekiel, Philip, Samson, and Leah our future hope.

ACKNOWLEDGEMENTS

This thesis owes its existence to a happy conjunction of interest on the part of many individuals, so many that I cannot name them all here. I am most grateful for their foresight and encouragement. I wish to place on record the valuable contributions of the following people:

- (a) Dr. James Egun Atolagbe, my supervisor, for his inspiration and guidance throughout this study. He made me enjoy the academic exercise. He was always ready to assist me in my work.
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- (c) Drs. C.O. Udoh, James Ajala, V.C. Igbanugo, M.A. Chado for their constructive criticisms and words of encouragements.
- (d) Special thanks goes to my sister Mrs. Janet Alao for her generous financial assistance, encouragements and moral support.
- (e) Special appreciation goes to my brothers and sisters. They gave me moral support and of course, their existence inspires confidence in me.

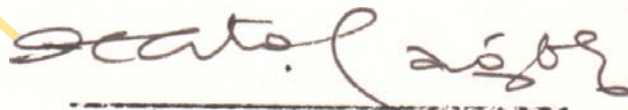
- (f) Messrs. Haske Dantani, A.T. Yusuf, U. Faruk, Moh'd. Lawal, A. Yusuf, for their co-operation, understanding and suggestions.
- (g) My deepest appreciation goes to Mary, my darling wife, who distinguished herself as an asset by her high sense of understanding, humility, kindness and hardwork. Besides her moral and financial support, she had in her fashion maintained and sustained the family.
- (h) Finally, thanks to Mr. Bennett Kweku Baffo for typing this manuscript.

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AUGUST, 1988.

CERTIFICATION

I certify that this work was carried out by
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CHAPTER ONE

INTRODUCTION

Leprosy, a chronic infectious disease caused by Mycobacterium leprae, is well known for its serious social stigma. A characteristic of the disease is its long incubation period which ranges from three to ten years, and sometimes longer (W.H.O., 1985). The disease, according to the World Health Organisation (1985), affects at least ten million people in the world, and about 1.4 billion people - nearly a third of the world's population, live in leprosy-endemic areas (mostly in Africa and Asia). More than a third of the conservatively estimated ten million leprosy patients in the world face the threat of permanent progressive physical disability, which in fact is often accompanied by social rejection.

The clinical course of leprosy is dependent on a ~~continuing~~ host-parasite relation in which the response of the host is largely predetermined by his innate capacity to lyse or not to lyse the invading parasites. The parasite itself is of low pathogenicity and possesses only slight invasive powers. Moreover, its substrate and environmental requirements make it one of the most fastidious of organisms. The disease affects the skin and

peripheral nerves mainly, but in some forms of the disease Mycobacterium leprae can be found in large numbers elsewhere, particularly in the nasal mucous membrane, smooth and striated muscle, liver, spleen, lymph nodes, eyes, testes, and blood vessel walls. For transmission of leprosy to occur, viable bacilli must leave the body of the patient and enter that of the contact.

There are several different types or varieties of leprosy. The causative organism is the same, but the reaction of the individual to the disease varies within a very wide range. The four main types are the indeterminate, tuberculoid, borderline (dimorphous) and lepromatous leprosy. The disease is one of the single highest cause of disability in mankind (Freitas, 1985).

It is difficult to know the present situation of leprosy in Nigeria. This is because there have been no surveys for several years to determine the prevalence of leprosy in the various states.

In 1976, an appraisal of leprosy situation, including facilities was carried out for the whole country by the National Leprosy Control Committee. The information collected then were probably the most comprehensive information that is currently available for the country. The total number of registered leprosy cases for the country

then, with the projected population of 73,968,021 was 312,508, giving an average prevalence rate of known cases as 4.60 per 1,000. It was estimated that the country probably had about 592,706 leprosy cases at that time. This meant that there were 280,198 cases that were still at large (Des Plantes, 1985).

The leprosy situation in Sokoto State is also in a very bad condition; as reported in the State's Ministry of Health quarterly statistical return of leprosy situation for 1986. The State has a total number of 47,811 registered patients with 365 leprosy clinics. (See table 1.1. below).

SOKOTO STATE MINISTRY OF HEALTH QUARTERLY STATISTICAL RETURN OF
LEPROSY CONTROL SERVICES FOR THE PERIOD FROM JANUARY - MARCH, 1986

S/NO.	NAME OF LOCAL GOVT. AND GOVT.	LEPROSY TREAT. VILLAGE	NO. OF LEPROSY CLINICS	LEPRO-SARIUM HOSP.	NEW CASES REGIS-TERED	PATIENT TRANS-FER OUT	LEPROSY PATIENT DIS-CHARGED	DEAD	NON-ATTEN-DED	NO. OF PATIENT REGIS-TERED	DAPSONE USED DURING THE PERIOD
1.	Amanawa Lep. Hosp.	-	1	1	16	11	-	1	-	356	34,634½
2.	Argungu L/Govt.	1	35	-	11	30	-	-	76	3127	49,643½
3.	Anka Local Govt.	-	17	-	6	17	-	-	59	1931	26,237
4.	Bagudo Local Govt.	-	24	-	3	20	-	-	32	1726	22,149
5.	Bodinga L/Govt.	-	14	-	7	41	-	-	80	1719	20,986½
6.	B/Kebbi L/Govt.	-	16	-	3	23	-	1	83	2962	37,137
7.	Bunza Local Govt.	1	22	-	4	40	-	-	49	1975	24,636½
8.	Gummi Local Govt.	1	21	-	13	76	-	2	129	4086	76,896½
9.	Gusau Local Govt.	-	17	-	5	36	-	-	51	1416	29,634
10.	Gwadabawa L/Govt.	-	15	-	7	19	-	-	48	2346	39,986½
11.	Isa Local Govt.	-	9	-	2	13	-	1	46	984	19,217
12.	Jega Local Govt.	-	13	-	6	18	-	-	39	1219	23,618½
13.	K/Namoda L/Govt.	1	18	-	9	57	-	2	113	3683	57,916½
14.	Sokoto L/Govt.	-	17	-	18	69	-	3	95	3719	57,217
15.	Silame L/Govt.	-	14	-	13	30	-	-	69	1936	26,239
16.	T/Mafara L/Govt.	-	18	-	11	21	-	-	79	1824	29,636½
17.	Yabo Local Govt.	-	22	-	6	19	-	2	86	3324	61,289
18.	Yauri Local Govt.	-	20	-	3	15	-	-	63	1439	27,136½
19.	Wurno Local Govt.	-	16	-	5	13	-	-	80	2064	34,198½
20.	Zuru Local Govt.	1	36	-	33	17	-	5	106	5975	86,987½
G. TOTAL		5	365	1	181	585	-	17	1383	47,811	785,397

The leprosy situation in Nigeria, coupled with the easy spread of other communicable diseases form a major part of the total health problems in the country. Osagae (1984) was of the opinion that most of our current health problems are amenable to health education measures, thus, they require not only hospital and maternity blocks, medicines and treatment, but also modifications in beliefs and behaviours. The notion here is that people will generally improve attitude toward their health and develop respect for good health if exposed to factual information about their own health.

Any reduction in health status endangers one's capacity for work and therefore, productivity. There is therefore, the need for people to do everything possible to maintain good health, which, according to Kasl and Cobb (1966) is "preventive health behaviour". The premise for this notion is that people have a general desire for pleasurable continuity of life, though according to Kegeles (1969), what provides pleasure is probably idiosyncratic.

In order to maintain continuity of life, the individual must sometimes deal with emergent barriers. Certain of these barriers are potentially catastrophic if encountered. If the individual sees paths available for overcoming the barriers, he will accept them as path of the lifestyle; if on the other hand, he does not see such paths - or if such paths do not exist, he is likely to deny the existence of the barriers. An individual may see illness as a barrier that needs to be overcome or he may fail to perceive it as a barrier and not take action. However, once an individual sees illness as a barrier that needs to be overcome, he will start to behave in a way that is termed by Kasl and Cobb (1966) "sick-role behaviour".

Nonetheless, one's behaviour towards taking certain steps for the purpose of getting well depends on his perception of the benefits he will derive from treatment.

Rosenstock et al. (1959), Heinzlmann (1962), Suchman (1970), Becker et al. (1972), and Fink et al. (1972) have all shown in their studies that the motivation to change one's health practices or to seek medical care depends on one's perception or feeling of the seriousness of the sickness. Likewise, Elling (1960), Gabrielson (1967), and Becker (1972) showed that perceived benefits of treatment will aid a patient's compliance to therapy.

These concepts very well apply to the numerous leprosy patients all over the world, including Nigeria. In the case of leprosy patients, some diagnosis of illness has already been made and one would therefore expect that those who have been diagnosed should go for treatment, so as to get treated and cured, thereby, reducing the rate of spreading the disease. On the contrary, patient's compliance tend to be poor, the defaulters rate is high. This situation is a serious public health problem in Nigeria, and in Sokoto State in particular. Very often the authorities in the State are justifiably worried by the numerous leprosy patients converging in Sokoto township (the state capital) and begging in the streets.

In spite of all the scientific information available today about the severity of leprosy, substantial number of

people continue to contract the disease every year. Moreover, the fear and the prejudices regarding leprosy and leprosy patients remain ingrained and persistent. In many societies, leprosy is associated with guilt, rejection and isolation. These concepts were no doubt influenced by religious beliefs, local traditions, ethnicity, ignorance as well as the pathology of the disease.

Failure on the part of health personnel to appreciate the importance of social and psychological factors related to disease have contributed to the failure of otherwise well conceived treatment programmes of leprosy. There is therefore the need for researches that would attempt to enhance compliance to treatment in leprosy by modifying the sociobehavioural pattern, demographic factors and beliefs of patients and non-patients towards leprosy treatment.

SOKOTO STATE: A BRIEF DESCRIPTION

A brief description of Sokoto State, here will enable readers have some clear ideas about the leprosy situation in Sokoto State as it relates to the state in general.

Sokoto State came into being with effect from 1st April, 1976 as a result of the creation of more states in the Federation by the then Federal Military Government.

With an area of 64,681.75 square kilometres, Sokoto State of Nigeria covers 11% of the total land area of Nigeria. The State lies between attitudes 10° and 15° North and longitudes $3^{\circ} 25'$ and $7^{\circ} 30'$ East (Sokoto State Statistical Handbook, 1976). The State shares a common

boundary with the Republic of Benin which bounds it on the West. The Niger Republic bounds it on the North and North-west.

Locally, the state shares a common boundary with Kwara State on the South-west, Niger state on the south and Katsina state on the east.

The state comprises of five administrative divisions with nineteen local government areas. Table 1.2 below shows the five administrative divisions and the local government areas in each division.

Table 1.2

SOKOTO STATE: Administrative divisions with Local Government Areas.

DIVISIONS

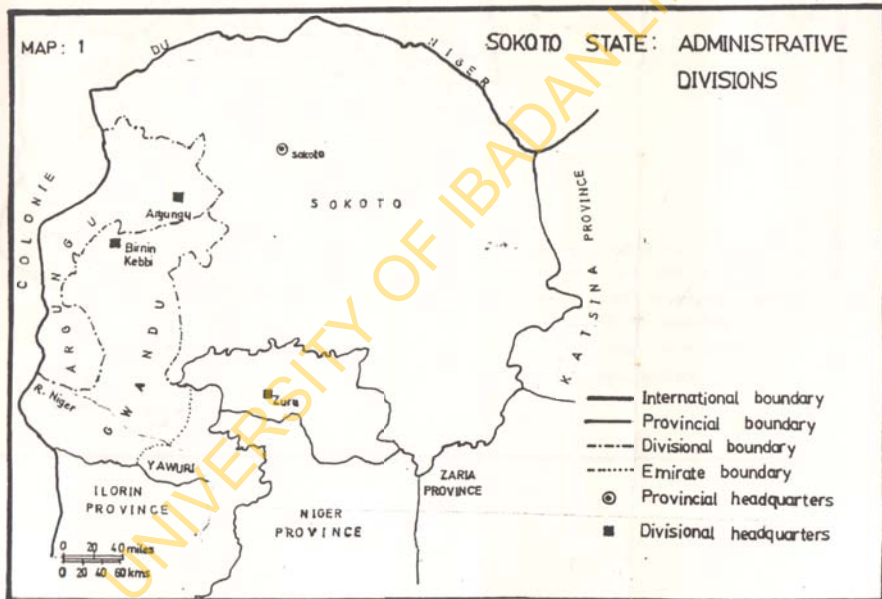
	ARGUNGU	GWANDU	SOKOTO	Y'AURI	ZURU
LOCAL GOVERNMENT AREAS	Argungu	B/Kebbi Bunza Jega Bagudo	Anka Bodinga Gwadabawa Gunmi Gusau Isa K/Namoda Silame Sokoto T/Mafara Wurno Yabo	Yauri	Zuru

Source: SOKOTO STATE STATISTICAL HANDBOOK 1976.

Based on the 1963 population census, the state has a total population of 4,538,789 which represents 8.2% of the entire population of Nigeria. (Sokoto State Statistical Handbook, 1976).

The map below shows the state with the local government areas.

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MAP: 2

SOKOTO STATE: LOCAL GOVERNMENT
AREAS



- International boundary
- · - State boundary
- - - Local Government boundary
- District boundary
- Local Government headquarters

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STATEMENT OF THE PROBLEM

The purpose of this study was to investigate whether perceived severity of sickness and benefit of treatment by leprosy patients in Sokoto State, have any significant influence on their compliance to treatment.

Specifically, the study attempted to find answers to the following questions:

- (1) Do leprosy patients who perceive their sickness to be very severe comply to treatment more than those who perceive it moderately severe?
- (2) Will those who perceive their sickness to be very severe comply to treatment more than those who perceive it not severe?
- (3) Would there be a difference in compliance between those who perceive their sickness to be moderately severe and those who perceive it not severe?

- (4) Do leprosy patients who perceive leprosy treatment very beneficial comply to treatment more than those who perceived it somewhat beneficial?
- (5) Will the patients who perceived their treatment very beneficial comply to treatment more than those who perceive it not beneficial?
- (6) Do the patients who perceive their treatment somewhat beneficial comply to treatment more than those who perceive it not beneficial?
- (7) Would there be a difference in compliance between those who perceive their sickness to be very severe and those who perceive treatment very beneficial?
- (8) Do the patients who perceive their sickness to be moderately severe comply to treatment more than those who perceive treatment somewhat beneficial?

- (9) Will those who perceive their sickness not severe comply to treatment more than those who perceive treatment not beneficial?

HYPOTHESIS

The main hypothesis for this study was that perceived severity of sickness and perceived benefit of treatment of leprosy patients in Sokoto State would not have any significant influence on their compliance to treatment.

SUB-HYPOTHESIS

- (1) There will be no significant difference in compliance to treatment between leprosy patients who perceive their sickness to be very severe and those who perceive it to be moderately severe.
- (2) Those who perceive their sickness to be very severe and those who perceive it not severe will not differ significantly in their compliance.
- (3) There will be no significant difference in compliance of between those who perceive their sickness to be moderately severe and those who perceive it not severe.
- (4) Those who perceive leprosy treatment to be very beneficial will not comply to treatment more than those who perceive it somewhat beneficial.

- (5) There will be no significant difference in compliance to treatment between the patients who perceive their treatment to be very beneficial and those who perceive it not beneficial.
- (6) There will be no significant difference in compliance to treatment between the patients who perceive their treatment to be somewhat beneficial and those who perceive it not beneficial.
- (7) There will be no significant difference in compliance between those who perceive their sickness to be very severe and those who perceive the treatment to be very beneficial.
- (8) There will be no significant difference in compliance between the patients who perceive their sickness to be moderately severe and those who perceive treatment somewhat beneficial.
- (9) There will be no significant difference in compliance between those who perceive their sickness not severe and those who perceive treatment not beneficial.

SIGNIFICANCE OF THE STUDY

The importance of health to any community cannot be over-emphasized. The increasing desire of both government and people to improve health conditions and to engage in

health planning has encouraged research into various aspects of health. This research is concerned with one of the aspects - the social aspect.

There is a reciprocal relationship between health and the general social level of a nation. As observed in the African Environment (1975), world-wide, efforts in the promotion of health is now focussed towards researches and programmes which are aimed at understanding and influencing human behaviour. It is now accepted that successful health programmes should take into consideration what people themselves think and do, or might do about their own health (Vgas et al, 1982).

All public health problems have to a certain degree, social components. Leprosy is one in which this is highly operative; and the time has come when this aspect should be more carefully looked into. In fact, acceptance of medical, technical or scientific ideas can only be possible if the social and cultural notions do not run counter to them. Leprosy is a health problem of great magnitude in a developing country like Nigeria. The problems of leprosy patients are numerous. The psycho-social constraints are not confined to the individual patient alone, but extends to their family members. This is substantiated by an observation by Vgas et al (1982), who cite an instance of 70.2%

of leprosy patients leaving home for fear of their family loosing the kind of prestige they have in the community.

A research work on leprosy is important not because the disease eventually kills, but because it cripples. According to Browne (1983), leprosy vies with poliomyelitis as the world's greatestcrippler. If crippling includes impairment of sensation, then about a quarter of those suffering from leprosy are crippled.

Leprosy is an unmitigated personal misfortune and its far more devastating in its physical effect than all other deformities put together. Leprosy is thus the cause of grave economic loss in many developing countries, including Nigeria. Instead of producing or contributing to the community, the crippled victim of leprosy makes demands on his healthy fellows for food, shelter and medical care. All this is quite apart from the human tragedies that result from a disease that has serious social consequences for the patient and his family.

This research is important in that it will aid the policy on, and the execution of leprosy treatment. At the same time, it will aid in developing a conceptual framework which will take into consideration the social,

economic and psychological problems experienced by leprosy patients, their relatives, the general community and the staff concerned. In this way, adequate rehabilitation of victims, could be made possible.

This study will also help to enhance compliance, by providing adequate strategies necessary for the improvement of individual's acceptance of health-related recommendations and ultimately, reduce the deleterious effects of non-compliance to medical treatment.

This study offers an opportunity to diffuse knowledge already available to practitioners delivering public health and medical care services. The findings of this study will also help to determine whether it is the perceived severity of sickness or the perceived benefit of treatment that aids compliance to treatment or even both. This will help in developing an adequate programme that will assist in persuading people to comply to treatment.

Finally, little is known about the stability of these psychosocial variables; and major researches has not yet been directed at determining either the origins of these beliefs or the conditions under which they are acquired in Nigeria. If such information were available, it could be used in the systematic development of primary and

secondary education curricula to initiate (or modify) health beliefs in children; thus providing a basis for later minimizing in the adult the psychological and social barriers to accepting an otherwise beneficial health service.

DELIMITATION OF THE STUDY

The health belief concepts covers a very wide area and is broad in scope, that all of the areas cannot be thoroughly examined within a single research project such as this one. This study was therefore delimited to the study of impacts of perceived severity of sickness and perceived benefit of treatment in relation to compliance to treatment of leprosy patients in Sokoto State of Nigeria.

The study was also delimited to:

- (a) Three out of the five administrative divisions in Sokoto State. The administrative divisions used were the Argungu, Sokoto and Zuru.
- (b) Eight local government areas. These are Argungu, Zuru, Anka, Gwadabawa, Sokoto, Gusau, Kaura Namoda and Gummi local government areas.
- (c) The subjects for this study were 952 leprosy patients selected on the basis of population ratio of registered leprosy patients in the three administrative divisions used for the study.

- (d) Out patients only. Those who were in-patients or who lived in the leprosarium hospital were not used because they were under close supervision by health workers there and it was mandatory for them to attend the clinics on clinic days. Hence, their compliance behaviour may be greatly influenced by the health workers.
- (e) Structured interviews as the instrument for data collection because most of the respondents were illiterates who cannot read nor write.
- (f) The use of percentages and chi-square as the main statistical tool for data analysis.

LIMITATIONS OF THE STUDY

This study was limited by the fact that some of the respondents were reluctant to respond to the interview because they were demanding money before they could be interviewed, being beggars. Some even refused to be interviewed if money is not given to them, they prefer to go out in the streets and beg for money.

The lean financial position of the researcher and lack of time posed some limitations on the researcher since the three administrative divisions covered fourteen (14)

out of nineteen (19) local government areas of the state, and transportation costs were high.

The general problems of self report in behavioural investigations were also sources of limitation in this study. People may generally not be honest enough in their responses, especially when the issue touches on some socially and legally disapproved behaviour such as patronage of quack doctors and herbalists.

The low level of awareness of implications of conducting researches of this kind in our society probably affected the responses obtained from the subjects. Some respondents refused to be interviewed because they suspected the researcher to be a government agent trying to identify them, in order to force them to leprosy camps, thereby separating them from their families.

The researcher, being aware of these limitations, attempted to reduce their effect skillfully by handling the interview and taking time to explain the objectives of the study to the respondents. It is the belief of the researcher, that a fair result was obtained, by so doing.

DEFINITION OF TERMS

It is pertinent in this type of study to give the definition of words as used in the context of the study,

since some words may connote different meanings.

Health Behaviour:

Any activity undertaken by a person who believes himself to be healthy for the purpose of preventing disease or detecting disease in an asymptomatic stage.

Illness Behaviour:

Any activity undertaken by a person who feels ill for the purpose of defining the stage of his health and of discovering suitable remedy.

Sick-role Behaviour:

The activity undertaken by those who consider themselves ill for the purpose of getting well.

Compliance:

Compliance has been defined in many different ways, with definitions ranging from strict to loose interpretations of the term. Haynes (1979) for example, defines compliance (or adherence) as "the extent to which a person's behaviour (in terms of taking medications, following diets, or executing lifestyle changes) coincides with medical or health advice". Others add to this definition by including as components of compliance, knowledge of the correct name of the medication, attendance at follow-up appointments

(Becker, Drachman and Kirtscht 1972; Nessman, Carnahan and Nugent, 1980).

In this study, compliance refers to a patient's adherence to prescribed medical regimens, which in the case of leprosy patients, is attending leprosy clinic once in a week or weekly.

Non-Compliance:

Failure to adhere to prescribed medical regimens, which in the case of leprosy patients, is failure to attend leprosy clinics to collect medicines weekly.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of related literature to this study were examined with respect to the following:

- (a) Conceptual Framework
- (b) Leprosy - A General Overview
- (c) The Concept of Health Behaviour
- (d) The Sick-role Behaviour
- (e) Avenues Sought for Treatment
- (f) Compliance to Treatment

Literature in the area of social aspect of leprosy is very limited probably due to the social stigma attached to the disease. In Nigeria for instance, only very few research work has been carried out in the area. In fact, literature review reveals that this study is the first research work on compliance to treatment of leprosy patients in Nigeria. This situation explains the partial dependence on foreign relevant materials and on studies done on other endemic diseases.

CONCEPTUAL FRAMEWORK

Making health decisions, such as health behaviour, illness behaviour and sick-role behaviour, is a complex process in which an individual moves through a series of stages or phases in each of which he interacts with

individuals and events. The nature of the interaction at any one of these stages may increase or decrease the probability that a particular subsequent response will be made.

In a study such as this one, where the impact of perceived severity and benefit of treatment on compliance of leprosy patients is being investigated, there is the need for an awareness of a perspective in the form of a conceptual model which will provide direction for the research. The need for this model should not be underestimated since such an approach helps to put these gamut of ideas and studies into a meaningful and proper perspective.

A number of conceptual models have been proposed to attempt an explanation of individual health related behaviours. Most notable have been the frameworks advanced by Hochbaum (1958), Zola (1964), Rosenstock (1966), Suchman (1966), Mechanic (1968), Anderson (1968), Kosa and Robertson (1969), Antonovsky and Kats (1970), Becker et al. (1972), Anderson and Bartkus (1973), and Fabrega (1973). Among these, the model which has received the most direct attention and study (Mackinlay 1972, Mechanic 1976)

and which has influenced much additional research (Rosenstock, 1974) is the particular theoretical formulation identified as the Health Belief Model (HBM). Kasl and Cobb (1966), stated that the model "seems to describe satisfactorily the majority of findings" on health and sick-role behaviour. This model, or the various dimensions that make it up will be of value in explaining compliance with treatment in leprosy.

THE HEALTH BELIEF MODEL (HBM)

The basic components of the Health Belief Model (HBM) are derived from a well established body of psychological and behavioural theory (Maiman and Becker 1974) particularly the work of Lewin et al. (1944) who believe that people exist in a life space composed of regions with both positive and negative valencies (values). An illness would be a negative valency and would have the effect of pushing a person away from that region, unless doing so would cause the person to enter another region of even greater negative valency.

While people are pushed away from the regions with negative valency, they are attracted towards the regions with positive valency. Thus a person's behaviour might be

viewed as the result of seeking regions which offer the most attractive values. This "value-expectancy" approach describes behaviour or decision making under conditions of uncertainty (Feather 1959), wherein behaviour is predicted from both the individuals valuation of an outcome and the expectation that a specific action will result in that outcome.

Originally, the major elements which constituted the HBM were perceived susceptibility, perceived severity, perceived benefits and perceived barriers, these are shown in fig. 2.1 below.

INDIVIDUAL PERCEPTION

MODIFYING FACTORS

LIKELIHOOD OF ACTION

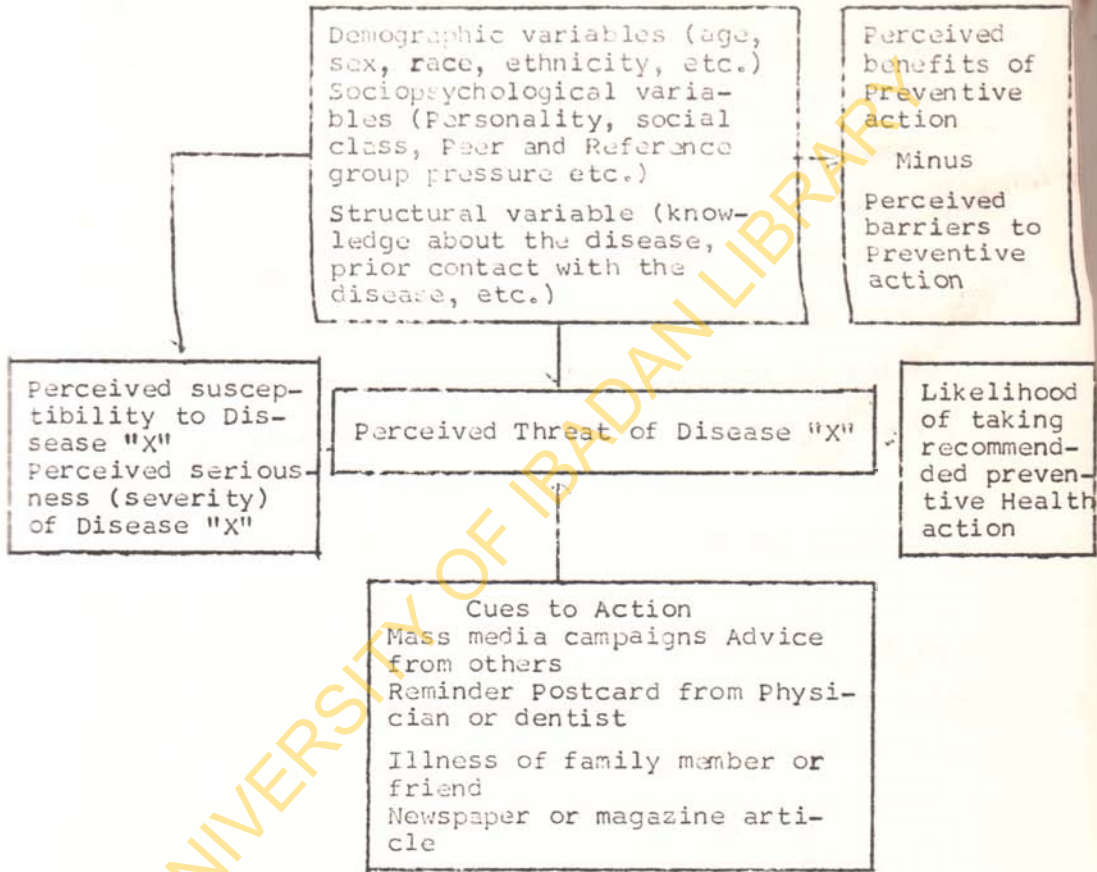


FIG. 2.1

THE ORIGINAL "HEALTH BELIEF MODEL"

The diagram in fig 2.1 suggests that preventive action taken by an individual to avoid disease "X" is due to the

particular individual's perception that he or she is personally susceptible and that the occurrence of the disease will have at least some severe implication of a personal nature. The assumption here is that, by taking a particular action, susceptibility would be reduced, or if the disease occurred, severity would be reduced. The model also postulated that a relevant stimulus or "cue to action" must occur to trigger the appropriate health behaviour; thus stimulus might be internal (eg. symptoms or bodily states) or external (eg. health communications or advice from others). Rosenstock (1974), believes that "cue to action" are required because an individual may perceive that a given action will be effective in reducing the threat to disease, but action may not be taken if it is further defined as too expensive, too unpleasant or painful, too inconvenient or perhaps too traumatic. While it was understood that diverse demographic and sociopsychological variables might, in any given instance affect health motivations and perceptions, these variables were not seen as directly causal of compliance.

Since its original inception, the Health Belief Model (HBM) has been extended to incorporate recent findings on health-related behaviours, although the basic paradigm has

been retained (Becker and Maiman, 1975). For example, the original model has a disease-avoidance orientation, yet it is likely that positive health motivation exist, and also, that individuals often engage in actions having health implications but for reasons unrelated to health.

Since persons are differentially disposed to approach various classes of positive incentives, the category "health motivation" was added to represent differences in degree of concern about health matters. Similarly, because the earlier model focussed exclusively on the index condition, more general measures of vulnerability to the worry about illnesses were created to tap broader perceptions of health threat. The concepts of "feelings of control over health matters", "faith in doctors and medical care" and "intention to comply" were added as well.

Feelings of control over health matters or locus of control (Becker et al. 1977; Wallston and Wallston 1978) is believed to be an important factor in explaining health behaviour, because the more the person feels powerless to ~~control~~ his or her life, or the more fatalistic the person is, the less likely he or she is to comply with officially recommended health actions. However, the explanatory

value of the health locus of control is being questioned by more recent research findings (King, 1982). It is argued that the health locus of control is limited in that it is too general, and it is proposed that an individual's feeling about his/her ability to control specific diseases is a more sensitive means of understanding the relationship between health control and compliance. Thus people who attribute the cause of the disease to reasons outside of their control may be less likely to participate in preventive programmes than those who feel the cause of the disease is within their control.

Finally, demographic, structural, and enabling factors found to be predictive in other studies were included as mediating variables in the revised model for predicting and explaining sick-role behaviours as operationalized in the present research as shown in fig. 2.2 below.

Readiness to undertake Recommended
Sick-role Behaviour

Modifying and
Enabling factors

Sick-Role
Behaviours

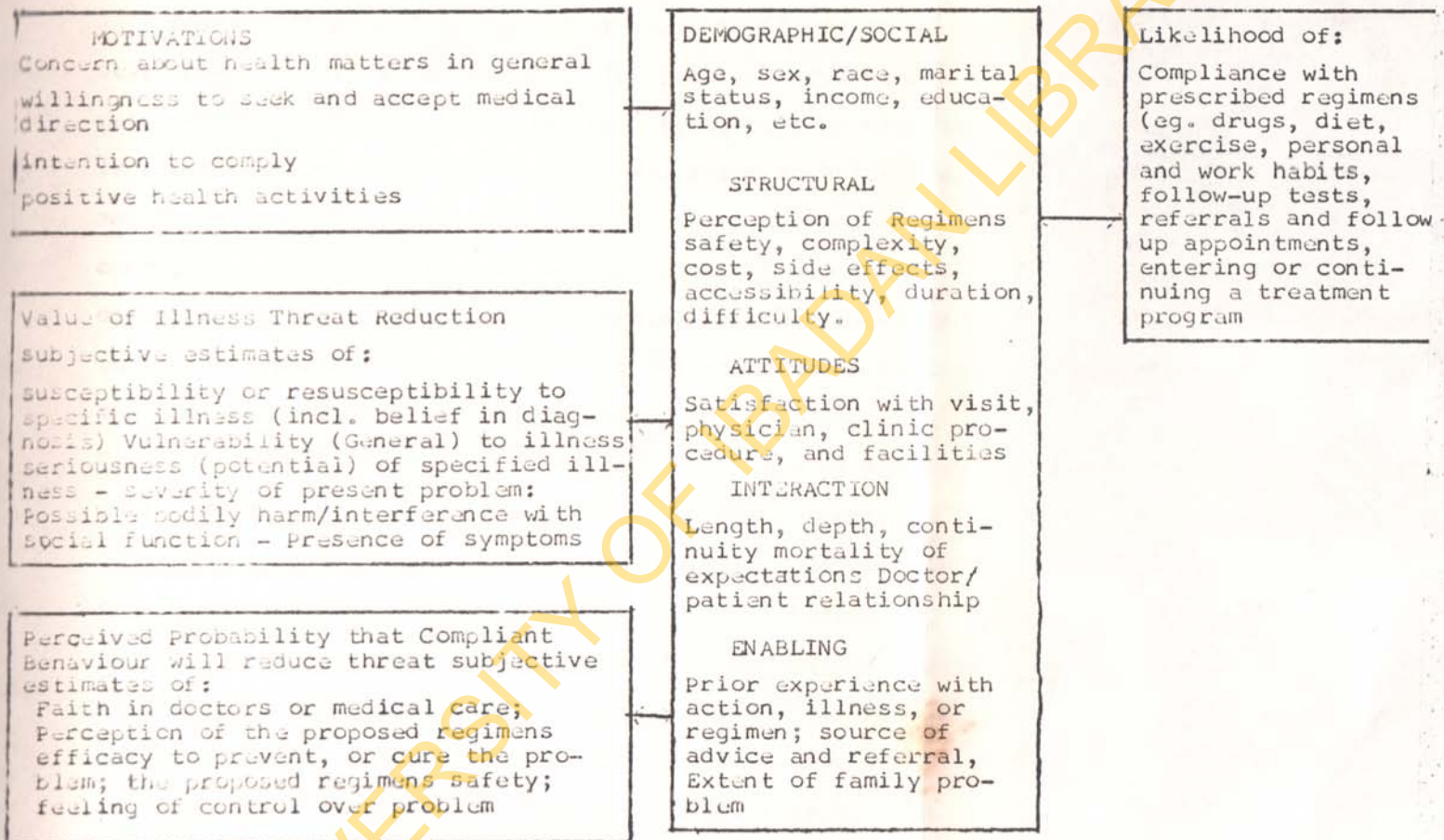


FIG. 2.2 - SUMMARY HEALTH BELIEF MODEL FOR PREDICTING AND EXPLAINING
SICK-ROLE BEHAVIOURS

LEPROSY - A GENERAL OVERVIEW

Leprosy is a health problem of great magnitude in a developing country like Nigeria. The problems of leprosy patients are more than their infected tissues; they have to face serious social ostracism which according to Balasubramanian et al (1984), stems from public ignorance and misconceptions. The problems of leprosy patients are multi-dimensional, the psychosocial constraints are not confined to the individual patient alone, but extend to their family members also. This is substantiated by an observation by Vyas et al (1982) who cites an instance of 70.2% of leprosy patients leaving home for fear of losing family prestige.

Antia, (1977) observed that though leprosy is curable, the age-old stigma and fear still pose a great threat to the treatment and control of the disease. The social implication of the problem, as is well-known, arises out of the inevitable consequence of social rejection, alienation from the society and finally complete debilitation that its victims are confronted with (Sharma, 1984). Loss of limbs, dreadful appearance and other physical deformities of the leprosy affected persons, undoubtedly, are the major cause of the age old stigma and ostracism leading to the problem of treatment dropouts.

Ahmed (1984), stressing the negative attitude of people towards leprosy in general, observed that in many societies, leprosy is associated with the idea of rejection and isolation, and these ideas are influenced by the pathology of the disease, the religious beliefs and local traditions. He believed that these cultural factors affect the leprosy control activities.

THE DISEASE

Leprosy (Hansen's Disease) is a chronic, intra-cellular infectious disease unique to man. Usually, it is not fatal. The loathing evoked by leprosy connotes its potential for mutilation (Hoeprich, 1972). The causative agent is the Mycobacterium leprae which are obligate intracellular parasites that are unique among mycobacteria in their ability to invade nerves. These micro-organisms, according to Browne (1984), are the only mycobacteria that possess Dapo-oxidase activity. Leprosy bacilli have never been grown on artificial culture media, and propagation in tissue culture has met with irregular success.

Mycobacterium leprae are apparently transmitted directly from man to man, the lepromatous type presenting the clearest danger in this regard. In tuberculoid leprosy, the highly resistant host limits clinical abnormalities to

a few nerves and related skin areas. In lepromatous leprosy, bacilliary multiplication is not limited and disseminated infection ensues, while Boderline leprosy includes the broad spectrum of intervening disease.

Bacilli presumably enter the body through breaks in the skin - for example, transmission by a tattoo needle has been documented (Hoeprich, 1972). Actual determinants of individual susceptibility are unknown, although children appear to be less resistant than adults. Prolonged intimate contact has been considered necessary for transmission. However, there are so many exceptions that leprosy is probably much more communicable than generally acknowledged and it is possible that only a limited number of the contacts who are infected actually develop clinical disease.

Pathogenesis and Pathology

In whatever way leprosy bacilli enter the body, they eventually involve peripheral nerves, with bacilliary multiplication, contiguous skin areas, including autonomic nerve fibres, dermal appendages and blood vessels, are invaded. Hematogenous dissemination of bacilli is probably an early phenomenon. As infection spreads along sensory nerves, motor fibres within parent nerve trunks are damaged.

Leprosy bacilli are unable to penetrate directly into the nervous system proximal to the dorsal root 'ganglia'. When there is dense proliferation of leprosy bacilli, as in lepromatous leprosy, bacteremia is virtually continuous, and bacilli are easily demonstrable in many organs; yet, there is little systemic reaction, and tissue destruction occurs mainly in cool, superficial locations: the skin (except in folds); peripheral nerves in subcutaneous loci; oral and nasopharyngeal mucus membrane (not enteric or vaginal); the testes (not the ovaries); and the anterior third of the eye.

MANIFESTATIONS

The different kinds of leprosy are due to different degrees of resistance in the bodies of different people, not to different kinds of bacilli. There are only a very few people whose bodies seem completely unable to resist the attack of *M. leprae*. At the other extreme, fortunately there are very many people who have such complete body resistance to the organism, that, even when they are exposed to large numbers of it, they do not develop leprosy (Ross, 1975). Ross (1975) also believes that, probably these people are by far the most common in society, as much as 85% of the total population.

Each case of leprosy does not manifest itself like any other case, the characteristics of the different kinds of leprosy are not quite so easy to define, but can be described reasonably well. This description is based on the degree of resistance and the number of *M. leprae* found in skin smears. The main types are:

INDETERMINATE LEPROSY

The earliest clinically detectable form of leprosy is called indeterminate because, according to Hoeprich (1972), *the ultimate host response is not yet apparent. The lepromin skin test may be of prognostic value. Leprosy is seldomly suspected here, because, the only manifestations are a few flat, ill-defined skin lesions with minimal sensory changes.*

TUBERCULOID LEPROSY

Many peripheral nerves may harbor *M. leprae* in tuberculoid leprosy, but clinical manifestations are limited to not more than one or two nerves and the related skin areas. The most frequent sites of involvement are the extremities, face and buttocks. The typical tuberculoid lesion is a large erythematous plaque with sharp outer margins fading centrally to a flattened clear zone that is rough,

anhidrotic, hairless, hypopigmented and anesthetic. A nerve twig may be palpable at the edge of the lesion and the parent nerve may be grossly enlarged. A liver biopsy may reveal granulemas. There are no systemic clinical manifestations.

BORDERLINE (DIMORPHOUS) LEPROSY

Skin lesions are smaller, more numerous, less nearly anaesthetic, and less sharply margined in borderline leprosy than in tuberculoid leprosy. Bandlike lesions with sharply punched-out centres are common. There is low grade bacteremia and granulomas are present in the lymph nodes, liver and testicles.

LEPROMATOUS LEPROSY

The early lesions of lepromatous leprosy are multiple, symmetrically distributed, erythematous, ill-defined macules and papules. The macules are shiny and may be perceptible only when viewed in obliquely incident sunlight. Plaques and nodules ultimately develop. In advance cases, virtually the entire skin surface is infiltrated by bacilli so that even normal-appearing areas may be grossly infected. ~~Enormous~~ numbers of bacilli are present, and there is continuous bacteremia with heavy seeding of multiple organs.

Nerve damage generally occurs late in the course of the disease, namely after three to four years.

THE CONCEPT OF HEALTH BEHAVIOUR

As a point of reference we have to ask why should one change his/her behaviour? The obvious answer exchange theorists would give is that the new behaviour is considered more rewarding than the behaviour forgone (Homans, 1961). In other words, there has to be something about the present and about the recommended behaviour that makes the latter more rewarding than the former.

According to Ben-Sira (1977), since we are dealing with health behaviour, we have to be aware of the fact that the present behaviour may be frequently considered as quite rewarding while the evidence that the prescribed behaviour will provide relevant rewards of a higher value is quite vague. To illustrate this concept; unless a healthy individual experiences some symptoms that may be related to his cigarette smoking, why should he give up the social and psychological rewards gained by this practice in order to gain a reward which at present he enjoys (health)?

Studies concerned with preventive behaviour were indeed aware of this problem and proposed variables which could indicate the extent to which there is evidence of

possible change of the balance among the present and prescribed behaviour. Thus Suchman (1967), seeking to classify and to integrate a wide range of variables concerned with preventive behaviour, suggested, by applying the classic epidemiological model, classifying these variables according to the three apexes of this triangle:

- (a) the host (or actor) who recognises the seriousness of the problem or accepts his personal vulnerability;
- (b) the "agent" or presumed health promoting of action, e.g. attractiveness of action; and
- (c) the environment e.g. social control factor, social pressure to act.

This model is undoubtedly valuable in providing a comprehensive checklist of variables that may be associated with preventive behaviour, as it may indicate the extent that the present behaviour is perceived as less rewarding than the proposed one. Its major shortcoming, according to Ben-sira (1977), lies in the failure to distinguish among the relative weights of each of them in crystallization of the motivation to engage in preventive behaviour and to specify the linkages among the variables which are

considered as essential for the understanding of the motivational process.

A further step was taken by Rosenstock (1969) who, summarizing the major studies of preventive health behaviour, developed a model with some (although not consistent) evidence, which may explain why one will engage in preventive health action. He argues that such a person:

- (a) believes himself susceptible to contracting a given condition unless action is taken;
- (b) believes in the seriousness of the consequences of such a condition;
- (c) believes in the benefit of the recommended course of action in that it reduces the disease threat;
- (d) does not perceive barriers (expense, inconvenience, pain) to taking the action; and
- (e) experiences a cue or trigger to trip off appropriate action.

It may be inferred from Rosenstock's as well as from other studies that these variables are additive in nature, i.e. that each makes an independent contribution to the behaviour. Rosenstock fails to indicate the linkage among them, a fact that is reflected in his conclusion that susceptibility is directly predictive (in combination with

other variables) of preventive health action, a conclusion that indeed gained some empirical support from the works of Kegeles (1963, 1964).

On the other hand, some approaches have considered illness as a state of physiological disturbance accompanied by a certain degree of emotional disturbance, proportional to the individual's subjective evaluation of the meaning and possible outcome of the that disturbance. Making inference from this, Kosa et al. (1969) suggested that the extent to which an individual experiences a feeling of susceptibility to a certain disease, may lead to some disturbance of the individuals emotional equilibrium. Thus the disease will occupy a much larger space in the individual's mind, following Antonovsky's (1970) line of thought, it will highlight the goal or maintain health", thereby increasing the silence of that specific disease.

This biological or physiological perspective of health and how it relates to individual's response to his state of health has traditionally, according to Mechanic (1978), been the most important aspect of medical science, and the major part of a physician's training as devoted to biological theories of bodily functioning and disease. But even

biological or physiological factors must be understood in the light of the circumstances, such as environmental, psychological, sociological and cultural conditions in which they operate. The tremendous ability of biological systems to adapt in a functional way to external conditions is indeed remarkable, and Dubos (1959; 1965) offers a fascinating discussion of some of these biological adaptations. He showed that man's adaptations to the biological functions is influenced to a very great extent by the way he behaves to health matters. Chen et al. (1984) in their study of the relationship between American women's preventive dental behaviour and dental health belief found that although toothbrush and flooshing, being personal oral practice, majority of those studied did not follow the recommended toothbrushing and flooshing schedule. In this study, 34% of wives, 44% of husbands and 53% of children did not brush their teeth as recommended while 28% of wives, 45% of husband and 49% of children did not use dental floss at all. This result shows that behaviour has a great influence on the biological functioning of the individual.

In one sense disease is a biological adaption. It is an outgrowth of the body's accommodation to internal

stresses and noxious external conditions. Since particular biological adjustments result in personal pain and discomfort and threaten longevity and capacity for activity, Mechanic (1978) observed that societies have always had a place for practitioners who attempt to influence the course of biological adaptation in a more benevolent direction. Apart from the biological perspective which has been traditionally recognized as a major aspect of medical science, the other behavioural perspectives in medical sociology that has a direct relevance to this study is the cultural perspective.

CULTURAL PERSPECTIVE

The cultural approach to health looks at the relationships between cultural content and cultural life styles, and between how different cultures look at health and how they react to illness. The cultural patterns of a community will very much influence the way the people of that culture reacts or look at the various aspects of a disease. To some extent, according to Mechanic (1978), the cultural context defines the conditions that are recognized as ill-health, the causes to be attributed to them, and the persons who have legitimate authority to assess and define such conditions.

In view of these facts, knowledge of the social and cultural factors that influence the medical or health situations is important and valuable in any health program. Brownlee (1978) stressing the importance of cultural knowledge on health programs, maintained that in a cross-cultural program where persons of more than one society meet, it may be of even greater consequence for the health worker to be familiar with the cultural values of the society. She believed that "outside" health workers who have a poor understanding of their own culture, that of the society where they are working, and the differences between them are likely to give "assistance" that may actually do much more harm than good. The contribution they make to the community could certainly be enhanced by an understanding of both cultures and how staff and community members might work together to provide the most effective aid.

Luijk (1974), writing on the social and cultural aspects of health and disease observed that cultural factors have an impact upon the pattern of health and disease in the community and play a role in the etiology of certain diseases. He believes that the factor also plays an important role in the organization and utilization of

modern and traditional medical care. Luijk (1974), also observed that in Kenya, the modern medical system and the traditional one sometimes compete for clients. He observed that defaultation rates in certain modern medical treatment and prevention schemes are high as a result of the influence of cultural and traditional beliefs concerning causation, etiology and treatment of diseases. Hence, every health worker should have some knowledge of the system of traditional medicine in his area of operation in order to take into account the possible effect of the cultural and traditional beliefs upon the implementation of treatment and health measures.

This idea was well amplified in a remark by a celebrated Malariologist Dr. Samuel Darling (1978), who said that "If you wish to control mosquitoes, you must learn to think like a mosquito". The cogency of this advice is evident. It applies, however, not only to mosquito populations one seeks to destroy but also to human populations one hopes to help. If one wishes to help a community improve its health, one must learn to think like the people of that community.

Cross-cultural research has contrasted the ways in which health practitioners using different systems of

medicine respond to patients behaviour and symptoms. For example, Maclean (1974) compared the behaviour of African herbalist and diviners with that of Western trained doctors. She concluded that African medicine continues to be practised in Nigeria because it takes greater account of the stress in patients lives which may provoke or prolong symptomatology. The reactions to illness of various cultural groups treated by western medical systems, studied by Clark (1959), Zborowski (1958) and Zola (1966) all showed that the culture of the people plays an important role in the way people respond to treatment regimes and their behaviour generally to illness.

Lipton et al. (1984) in their study of ethnicity and the pain experience, found out that ethnicity has a relevant correlation in determining health beliefs and illness behaviour. Likewise, Chrisman (1980), Harwood (1981) and McGoldrich et. al. (1982) shows how ethnic group membership influences how one perceives, responds to and communicates various symptoms, as well as from where one selects to obtain treatment and the type of treatment required.

Similarities and differences between and within ethnic groups as shown by Kleinman and others (1978), have been related to two major factors. The first, culture, influences the meanings of symptoms and the way in which health

problems are treated. Secondly, social, involves how families or local groups affect peoples behaviour related to health. Hence, it would be useful for the practitioner to be aware of those cultural values that may be unique to specific groups and shared by several, as well as to be cognisant of the differences between cultures; (Spector, 1979).

The studies of Burns (1951), Deasy (1956) and Riffenburgh (1966) all indicated that cultural factors and patient's beliefs influence the outcome of medical visits and treatment to varying degrees. In addition, Davis (1968) and Glasser (1988) found that personality and social influences determine response to medical advice.

In conclusion, it should be noted as Linton (1956) puts it that the manifest forms taken by many illness conditions are culturally patterned; and if one knew the content of the culture, one could predict in a fairly reliable fashion the form this condition would take.

SOCIAL ASPECT OF LEPROSY

The critical role of social factors in successful disease control cannot be over emphasized. This has led social scientists representing various disciplines and medical practitioners to work together to develop an inter-

disciplinary perspective on health in general and leprosy in particular to undertake researches which aims at identifying obstacles to the control and treatment of leprosy.

Giel and Luijik (1970), in their study of leprosy in Ethiopian society observed that, the problem of leprosy, especially with regard to its social aspects, seem impressive largely because so little is known about the factors affecting the life of the patients. They observed that in Ethiopia, leprosy is without any doubt a highly decodable disease, that is, it is very unlikely for a patient to go unrecognized either by others or by himself as suffering from the disease for a very long time. Their interview revealed that not even the native doctors (healers) and priests who are otherwise wary of modern medicine, want to risk their reputation with the leprosy patient.

There is little doubt about the stigma attached to the disease by those who are not directly involved. People entering the bus which links the areas around leprosy hospitals will cover their mouths and nose. With these observations, it could safely be concluded that, the society views leprosy as a very severe disease hence, their attitude towards leprosy patients is that of despair.

The leprosy patients in these communities, on the other hand, were found to refer to their condition in negative terms, denoting, for example, shame and despair. Such attitudes had a profound effect on their readiness to seek and comply with treatment, which of necessity requires a long term course of therapy. This study of Giel and Luijik (1970), concluded that because of the serious nature of the disease as perceived by both the community and the patients, the patients responded to their predicament by leaning towards begging for alms and as generally believed, being punished by God, the leprosy patient becomes a beggar in His Name.

Lucas (1972) also commenting on the medical aspects of the rehabilitation of beggars ascerts that in Nigeria, ill-health in particular, and physical handicap in general, is the most important factor which turns a person into a beggar. The commonest types of disabilities, according to him include blindness, deafness and disorders of limbs which cripple a person; diseases of the nervous system especially leprosy are also determinants of begging.

Lucas (1972), emphasized that physical handicaps such as in the case of leprosy and other diseases like poliomyelitis, by themselves does not necessarily lead to begging in cases where the families of the physically disabled

can look after them. But what he considered even more important is that although the person is physically handicapped, he may still possess sufficient skills, powers and faculties to make him employable provided that appropriate measures are taken to counteract his disability.

Social disabilities, such as ostracism as in the case of leprosy is another major cause of begging. A beggar who is no longer accepted by his reference groups or relatives may become alienated, which may have effect on his mental health. The notion expressed here by (Lucas 1972) is that the way the society perceive the severity or seriousness of a disease determines the way they react to those suffering from the diseases.

Much of the feelings people express about beggars such as carrying them out of the streets and getting them into institutions and so on, are the results of genuine concern for them. By the same token, part of such feelings point to fears and resentment which people have for beggars; because they are dirty, untidy and diseased. Some of these fears are justified while others are exaggerated. For instance there are those unnatural fears which people express towards beggars; he gave the example of the fear of deformed leprosy patient. He observed that in many parts of Nigeria, people are terrified of them because

they feel that their amputated fingers and legs must carry disease.

According to Lucas (1972), the kinds of leprosy patients that we see, such as those who have lost their toes, fingers, noses and so forth may not constitute hazard to general community health from the point of view of spreading the infection to anyone. And yet there is this constant fear that the patient who has lost his fingers can spread leprosy, which is to some extent infectious. He concluded that, the infective form of leprosy does not look as what people normally regard as leprosy. The people who have the form that is most highly infectious live and work among the community unrecognized. In summary, it can be inferred that among the major factors that pushes or leads people to begging is the severity or seriousness of the illness they suffer more so the way the general public reacts to such illness.

THEORIES AND MODELS OF HEALTH BEHAVIOUR

Along with these concepts of behaviour, Ross and Mico (1980) argue that all leading causes of disease and death have behaviour implications; and they are mainly as a result of poor health behaviour. This assertion led them to categorize theories relating to individual behaviour into nine major categories. These are the perception, motivation, attitude change, problem-solving and creativity, develop-

mental, personality, learning, experimental, and group dynamics theories.

Perception theory as a means of grouping individuals into how they accept or reject health education messages or how they comply or not comply to treatment. The way they perceive the disease will affect their behaviour. Motivation theory helps to assess an individual's humanness, his feelings and needs that must be met. Attitude change theory shows how attitudes can influence an individual's behaviour and also how behaviours could be changed. Problem solving and creativity theory illuminate how people see and approach a problem, develop ideas, work on it and decide on the appropriate solution. In developmental theory one sees the process of growth and the various forces that affect one's growth.

The effects of heredity, environment, and self aspect are the main concern of personality theory. Learning theory explains how learning takes place in various settings. Experimental learning theory sees learning as a four stage cycle which includes concrete experience, observation and reflection, formation of abstract concepts and generalizations and testing the implication of concepts in new situations. Finally, group dynamics theory shows how individuals

behave in groups and the influence of the group on the individual's behaviour.

The importance of these theories in shaping individuals behaviour and the relevance to health can be seen in their ability to mould or direct one's action and the realization of one's potentials in maintaining good health (Court Wright and Zander, 1967). The emphasis of these theories lies in the believe that group solving procedures tend to produce quick behavioural changes. Shaw (1967) for instance indicated that in complex situations, group problem-solving tends to be more effective than individual problem-solving, but agrees that group generally take more time to complete tasks than do individuals working alone. Asch (1964) was quick to warn that group interaction tend to produce group norms and at the same time, deviations from which can cause members to persuade the recalcitrant person to conform or to reject him altogether. He also agree that an individual is likely to conform to group opinion.

However when a situation where members refuse to obey or agree with a general decision arise, the group interaction must be followed by consulting individuals for co-operation and assurance of meeting both individual and group needs so that full participation by members can

continue. A study of group composition by Haythorn (1968) indicates that individuals who affirmatively oriented toward other people enhance group morale, interaction, and cohesion, whereas unconventional, unpredictable or anxious persons tend to inhibit effective group functioning.

All these theories and concepts helps to explain some of the undertones which affect one's behaviour. However, the complex process of behavioural change can not be properly explained without the integration of several theories and concepts into a collective strategy known as a model. This model will help to produce a desired result (Ross and Mico, 1980).

Among the models that help to explain process of behavioural change in health are the health belief model (HBM) which has been explained, the Personal Choice Behaviour Model (PCBM), and the Green's Health Education Model (HEM).

The personal choice behaviour model was formulated from studies on smoking habits. The model identifies initiation, establishment, maintenance and cessation as the motivator for individual change in behaviour (Horn, 1966). The initiation may be encouraged by curiosity, availability of cigarettes or a desire to rebel against authority; while

establishment of smoking may be influenced by expanded opportunities for social interaction, or feelings of relaxation and tension management. Smoking maintenance is usually the result of a habit or dependency. Cessation on the other hand will depend upon such factors as a perception of the psychological usefulness of smoking or dangers of continued smoking and the environmental forces that support efforts towards change.

Finally Green's health education model developed by Green (1976). The model identifies three factors which are antecedents to behavioural changes which are required in preventive health programmes. The factors are pre-disposing (knowledge, attitude, values, perception, norms), enabling (availability of resources, accessibility, referrals) and reinforcing factors (attitudes and behaviour of health personnel). The three factors will precipitate behavioural problems, the indicators of which are pattern of utilization, type of preventive actions, consumption pattern and compliance to treatment.

The health education components of preventive health programme may be considered to include:

- (1) Communications directed at the public and at patient and families to influence knowledge, attitude, belief and norms supporting health practice.

- (2) Community organization activities designed to influence the voluntary adjustment of resources to make health services more accessible and acceptable to the population in need of these services.
- (3) Staff development activities designed to influence the attitudes and behaviour of providers of health towards patients and clients so as to reinforce appropriate health behaviour in the public.

The common features of these three modalities of health education and therefore the defining characteristics of health education strategies, is that they are designed to bring about voluntary changes in health related behaviour.

FACTORS INFLUENCING HEALTH BEHAVIOUR

Age, sex, marital status, income, educational level and other demographic variables have all been shown as factors that influence individual and group health behaviours.

Age has been indicated as one of the factors influencing people's health behaviour (Luft 1966; Vobecky et al 1972 and Nemat and Krause 1973). Adejumo (1982) also indicated that more aged people believes more in traditional concept of disease causation and traditional form of treatment than the young and middle aged people; while

Anderson (1973) shows that the adolescents more than the adults are guilty of alcohol and drug abuse.

Adejumo (1982) shows that women are more likely to yield to the unnatural influences on disease than men. Walker (1979) believes that sex is a factor which influences health behaviour. Hackett (1981) opined that in situation where a woman's personal fears and hopes are so deeply involved, it is likely that she will rely more on the assistance from familiar adviser and from supplicating the gods than from the paraphernalia of a gynaecological clinic.

A lot of studies have summarized that marital status i.e. married individuals take less risk on health matters, take proper diet, and pay prompt attention to ill health problems and value good health more than the unmarried individuals (Brooks and Brooks, 1979).

Individuals in the high income group show a tendency to utilize modern hospital treatment avenues during illness than those in the low-income group (Adejumo 1982, Frazier et. al. 1977, and Edington et. al 1979). However, Najman (1981) failed to obtain any strong association between socio-economic status and health care behaviour in an Australian setting.

Findings related to educational level are conflicting. Elling et. al. (1960) reported that low educational level leads to poor understanding and co-operation in patients with rheumatic heart disease. Young (1966) and Oyediran (1974) show that those with high educational level tend to accept the use of modern health facilities than those with low educational level. Similar result was reported by Anderson (1973) who concluded that individuals with higher educational level appreciate the importance of health and have a knowledge of what they should do to enhance their state of health.

While in a study of cardiac patients, David and Eichhorn (1963) found that a greater proportion of patients with high education reported failures in compliance to treatment over a given period; however, Johnson (1965) found that cardiac patients with high education were more compliant in carrying out recommendations regarding smoking. Gordis and Markowitz (1968) cannot demonstrate meaningful relations between demographic data and patients co-operation in penicillin prophylaxis. Davis (1968) in a study, also observed no demonstrable effects of patients background on compliance to treatment.

THE SICK ROLE BEHAVIOUR

Findings related to the sick role or activities undertaken by those who consider themselves ill, for the purpose of getting well has yielded an unsystematic multiplicity of findings which are sometimes either not predictive of patient's compliance (Charney et. al. 1967; Davis, 1968; 1966, Maddock, 1967 and Porter, 1969) or are mutually contradictory (Marston, 1970; Mitchell, 1974). These findings, according to Becker (1974) are due to over reliance on a "medical" model of patients behaviour, which focuses on the demographic and social dimensions of the patients as well as the regimen and illness as medically defined; whereas, analysis of the sick role is also possible on an institutional and societal level (Mechanic, 1978).

Parsons (1951), in his analysis has pointed out that adequate health on the part of most group members, much of the time, is a functional requirement of any social system. In other words, determining a legitimate procedure for the definition and sanctioning of the adoption of the sick role is functional for both the social system and the sick individual. The sick person is usually not blamed for causing his own illness because illness is regarded as a natural event.

Usually, the sick person is relieved from his usual function and the society sees such relief as a means of enhancing his quick recovery, thereby enabling the sick person to as quickly as possible, return to his normal work.

A practical illustration can be seen in the works of Field (1953; 1967) where in the Soviet Union, labour is severely required and needs are great. Production and labour needs were enormous and work demands on the population were so severe to the extent that many individuals in the society could not cope with the strenuous industrial demands, while some were unmotivated towards work. This situation led many people to visit doctors demanding legitimate excuses to enable them to be absent from work through faked illnesses. The rate of this practice was so high that government had to step in to protect economic production by limiting the number of those who doctors could give excuses at a time. This shows how the sick role could be manipulated by both workers and government.

Thus, it can be seen that the sick role could be manipulated to fit different situations by individuals. As noted by Mechanic (1964), the existence of such a mechanism

enables persons other than the patient himself and medical practitioners to adjust the meaning of illness and disability according to different situations and the changing needs of the community itself.

The implication of this type of behaviour is that compliance or co-operation can not be got from such faked sick role. Whereas, as is in the case of leprosy patients, there is no doubt about the condition of their illness, there is evidence of the disease and one would expect them to assume a proper sick role behaviour by attending clinics for treatment and complying to the medical regimen because health can not be simply given to people, it demands their participation. However, achievement of the patient's full co-operation is a general problem of medical therapy; this has been documented in studies of irregular discharge from tuberculosis sanatoria (Frankel, 1942), delay in seeking treatment for cancer (Aitken-Swan et. al. 1955), lack of response to case finding surveys (Burke et al. 1949) and inadequate co-operation in various preventive aspects of pediatric care (Deasy, 1956).

Since various elements of the health belief model are often associated with individual's decisions in the area of "health" and "illness" behaviours, the review that follows,

will focus on the attitudinal and motivational formulations to actions of those diagnosed as ill, that is, the compliance of these patients to treatment - in this case, leprosy patients are being considered.

PERCEIVED SUSCEPTIBILITY

Studies on the relationship between perception of susceptibility and health behaviours has yielded various results. Kegeles (1963; 1963) in his studies on preventive dental practices found a positive relationship between an individuals perceived susceptibility and his or her preventive dental visits. The conclusion from these studies was that any person who believed himself highly susceptible to dental problems would be more likely to make preventive dental visits.

There are other studies, on the other hand, that failed to confirm this relationship. Shuval (1970) for instance, conducted a study in Israel in which he showed no relationship between the perceived level of a persons susceptibility and whether or not he made preventive dental visits. Susceptibility to him meant how good one considered the present condition of his teeth to be and whether his teeth gave him a lot of trouble. Similarly, Tash et al. (1969) measuring the variable of susceptibility with respondents' estimates on the amount of dental work they thought they needed,

and would need a year later, yielded the result that people with low susceptibility were more likely to make preventive dental visits than either those who felt highly susceptible or who had no feelings of susceptibility. These studies among others, compared individuals according to their belief on their chances of having dental problems, and the type of preventive measures they would take. The findings of the studies thus, yielded conflicting results.

However, in the case of leprosy patients for instance, some diagnosis of illness has already been made, therefore, the concept and measures of personal susceptibility must be modified. Becker (1974) listed three approaches which he believes could help in measuring the variable of susceptibility of the sick person. The approaches he suggested were:

- (1) examining the individual's estimate of (or belief in) the accuracy of the diagnosis;
- (2) extending the concept to the individual's estimate of "resusceptibility" or the likelihood of recurrence of the illness if he or she has had it before; and

- (3) measuring the individual's subjective feelings of vulnerability to various other diseases or to illness in general.

The premise to these approaches, according to Becker et. al. (1972), is that where the disease is very threatening, where there is lack of confidence in the physician or diagnostic procedure, or when there exist erroneous health beliefs, the patient may reject the doctor's conclusions, and thus maintain a distorted view of personal susceptibility to the disease.

Most studies of the sick role behaviour, or "activity undertaken by those who consider themselves ill, for the purpose of getting well" were conducted with the notion of "resusceptibility". Heinzelmann (1962) for instance, showed a positive relationship in continued penicillin prophylaxis behaviour of college students with a history of rheumatic fever with their subjective estimates of resusceptibility. Also Elling and associates (1960) found significant positive associations between a mother's belief in the likelihood of her child getting rheumatic fever again and compliance to both administering penicillin and in-clinic attendance.

Contrarily, Gordis et. al. (1969) found that 58% of the compliers as opposed to 73% of the non-compliers, believed it possible their child are resusceptible to rheumatic fever attack. The authors were however of the opinion that the result "... reflect an awareness on the part of the respondents that since their children were poor compliers they were more susceptible and may not necessarily bear on the influence of perception of susceptibility on compliance status".

In another study, Becker et. al. (1974), showed that mothers who felt the child was resusceptible to the present acute illness (otitis media) would more often give the medication properly and more often keep follow-up appointments at the clinic. Also, Becker et. al. (1972) showed that the degree of certainty concerning the belief of the correctness of doctors diagnosis was positively related to compliance with penicillin therapy. The results of these studies shows that perceived susceptibility has demonstrable explanatory and predictive value in the area of sick role behaviour, when viewed from the perspective of the health belief model where the individuals' decisions in the areas of "health" and "illness" behaviour are considered.

It should be noted however, that studies on perceived susceptibility using the "medical model", has yielded an unsystematic multiplicity of findings which are often not predictive of such patient compliance, (Charney et al 1967; Davis 1968, 1966; Maddock 1967; and Porter 1969), or are mutually contradictory, (Marston 1970; Mitchell 1974). The main problem of using the medical model is that it stresses such easily identified and quantified dimensions as characteristics of the patient (e.g. demographic) and the illness (e.g. medically defined seriousness, duration, disability), (Becker 1974).

PERCEIVED SEVERITY

The inability of many human beings to take medication as directed is a major problem in treating all illness. For leprosy, where treatment is very prolonged, it presents a truly formidable obstacle. Human behaviour varies markedly from those who take medication very irregularly or not at all to those who take medicines according to exact instructions. In any reasonable approach to solving the problem, it becomes important to differentiate reliable and others unreliable, so as to manage them accordingly.

The Health Belief Model asserts that, even when an individual recognizes personal susceptibility, action will not occur unless he or she also believes that becoming ill would bring serious organic and/or social repercussions (Becker, 1974). This variable of perception of seriousness may include several different dimensions; such as the value placed upon good health, trouble produced by the illness, interference with important activities, clinical severity and impact on ones appearance (Chen and Tatsuoka, 1984; Becker 1974). Moreover, this variable refers to the person's subjective perceptions rather than to some medical or objective estimate of how serious an illness is.

Bonnar (1969), in his study of whether pregnant women take their iron pills found no relationship between medical views of the problem's severity and patients compliance. Similarly, Johannsen and associates (1966), MacDonald et. al. (1963) and Pragaff (1962) all found no association between patients perception of seriousness of their illness and medical view on the severity of the illness. These findings shows that what one individual or the society may see as serious may not be equally viewed as serious by another individual or other society hence the tendency of

divergent response to the conditions by the various groups of persons.

The perceived seriousness of a symptom or illness will affect the likelihood that a person will respond to it. If the symptom is familiar and the person understands why he has the symptom and its probable course, he is less likely to seek care than if the symptom is unusual, strange, threatening, and unpredictable. This is demonstrated in Koo's (1954) study where one of the respondents remarked "If I had a backache for two weeks,I think I'd go to the doctor, but I can't say for sure. If I knew how I did it - say from lifting a bucket of coal - I might not go as quick as if I didn't know where it came from".

Suchman (1965), found that symptoms perceived as more serious brought about a greater degree of concern, were more likely to be viewed as indicative of illness, and were more likely to bring about contact with a physician. Levine (1962), in a survey of almost 3,000 people concerning anxiety about illness, found that persons who perceive an imminent threat were more anxious than those who did not. Older persons did not find diseases that occur

primarily among the young as frightening as serious diseases that had a high prevalence in their age group.

Other studies that have produced positive relationship between perceived seriousness and compliance are those of Tash et. al. (1969) while assessing seriousness by the level of value placed upon mature teeth and their retention, confirmed that persons who believed in the seriousness of dental diseases consequently would be more likely to seek preventive dental care. Shuval (1970), obtained the same conclusion even though the definition employed was based on a combination of three questions - (1) Can one's teeth cause real trouble? (2) Can trouble with teeth affect one's general health? (3) Can poor teeth affect a person's work or other aspect of everyday life? Kegeles (1963), also found a positive association between perceived seriousness and preventive dental visits. He defined the seriousness variable on the basis of level of seriousness of the dental problems judged by the respondents. However, he was not able to find the same relationship in a second study on the same population (Kegeles 1963). A nationwide survey by Kirscht et. al. (1966), also did not find perceived seriousness of tooth decay and gum disease significantly associated with preventive dental visits and tooth brushing.

Like susceptibility, the role played by perceived severity in patients compliance to treatment is conflicting. Berkowitz et al. (1963), reported that patients with difficult illnesses or severe illness were less compliant whereas, Donabedian and Rosenfield (1963) in their study of the follow-up by chronically ill patients discharged from hospital, associated severe illness with increase compliance. Davis and Eichhorn (1963) found patients with newly diagnosed cardiac disease to be less compliant than those with established disease. This is probably because those patients, they observed, did not know how serious their problem was.

In a study by Charney et. al. (1967), on children taking oral penicillin, compliance was related to the mother's perception of severity of the disease, rather than to the doctor's view of severity. This type of result was also demonstrated in the study of Gordis and Markowitz (1968), on factors related to patient's failure to follow long-term medical recommendations. Also, Francis et. al. (1969), in their study on gaps in doctor-patient communication, and patients response to medical advice, reported that illnesses that the mothers of patient's regarded as very serious were associated with increased compliance.

Gabrielson et. al. (1967), in their investigation into factors which influence parents' behaviour toward defects discovered in their children at school, reported that there was a relationship between family and social factors in the effectiveness of follow-up of school health appraisals, family perceptions, values, attitudes and believes. These, influence the family's behaviour in response to referrals from the school. The main focus of this study was to explain the relationship between social and behavioural characteristics of parents and their follow-up action. The findings of the study shows that professional help was obtained in 144 of the 182 cases representing 79.1% of the children referred. The study therefore, sustains the hypothesis that there is a positive relationship between increased parental perception of seriousness and parent action in school follow-up recommendations.

Cauffman and Associates (1967) also reported that parents' estimates of severity of the child's condition is positively related to parental behaviour with respect to obtaining follow-up care in a wide range of school discovered illnesses and health defects.

There are however, other studies which reported that although the patients recognize and appreciate the severity of their condition yet, they did not comply to treatment because of one reason or the other. For instance, Elewude (1973) stated that the belief of most Pulmonary Tuberculosis patients was that although the disease is a serious one, it was not caused by any germ but by enemy who had charmed the sputem of the affected. Eke (1973), named other reasons why pulmonary tuberculosis patients defaulted. He said that in cases of girls, they defaulted because they felt their chances of getting married would be reduced if people knew they had pulmonary tuberculosis. Besides, many people living in cities did not want their neighbours to know when they were under treatment.

These studies help to show that there is an intimate and significant relationship between health and behaviour. The relationship is such that there is a behavioural component in the causation of disease and also in compliance with prescribed therapy; thus there is no disease of which effective control can be established without influencing various forms of behaviour and beliefs at the individual, group and community level (Hochbaum, 1970). This notion

was further amplified by Suchman (1966), in his study of health orientation and medical care. His findings support the general prediction that individuals with a popular or non-scientific health orientation would more likely underestimate the seriousness of their symptoms and deny the presence of illness.

Although findings relating to the variable of perceived severity and compliance to medical treatment and health recommendations were shown to be mixed, patients estimates of the seriousness of a present illness or of another attack, are consistently predictive of compliance with the prescribed medical regimen. A possible explanation for these somewhat conflicting data is that, in the case for sick-role behaviour, a diagnosis of illness has been made, and the patient is either experiencing symptoms or, as in the case of rheumatic fever prophylaxis, has experienced them before. The presence of physical symptoms probably exerts an elevating or "realistic" effect on perceived severity, motivating the patient to follow the physician's instructions as long as the organic indications of illness persist.

PERCEIVED BENEFIT OF TREATMENT

The relationships between health beliefs and health behaviour have been analysed in many studies. A variety of data indicate that most people will comply to treatment regimens if they have faith or believe that the treatment will be of benefit to them. Haefner and associates (1967), in a study of preventive actions in dental diseases, tuberculosis and cancer in America reported that respondents with greater perceived benefits of toothbrushing and dental visits had greater frequency of these actions.

Tash et. al. (1969) in analyzing the findings of a study, arrived at the conclusion that persons who believed in the benefits of taking preventive measures would be more likely to seek preventive dental services than persons who did not have the same belief. The same relationship was found by Antonovsky and Kats (1970), who examined the preventive dental behaviour of about 600 hospital employees and their dependents. In the same vein, although the dental activities taken at home was not widely studied, the evidence from the studies on dental visits have in general confirmed the linkage between the belief

in benefits of preventive dental visits and the frequency of visits (Chen and Tatsuoka 1984).

Gordis and associates (1969), studied why patients do not follow medical advice. In this study, compliance with physicians instructions was studied in children and adolescents on oral penicillin prophylaxis against rheumatic fever. The result on the belief concerning effectiveness of penicillin from the study shows that there were no differences between mothers of compliers and of non-compliers in the percentages who reported that the physician had told them to give their child penicillin once a day, nor did they differ in terms of understanding that penicillin prevents streptococcal infections or rheumatic fever. Furthermore, the groups did not differ in terms of their beliefs in the ability of the drugs to do this well, or to be effective; or in their conception of the frequency with which pills have to be taken, in order for them to work and the duration for which they are effective. This study therefore shows that lack of knowledge on the effectiveness or benefit of treatment affects patient's compliance to treatment.

In their study of the health belief model (HBM) and compliance with education given at a class in breast self examination, Calnan and Moss (1984), examines how far the health belief model predicts attendance at a class in breast self-examination and compliance with the education given at the class. The result showed that some dimensions of health beliefs were found to be among the best predictors of attendance; it showed the probability that complaint behaviour will reduce threat - perceived benefit; this shows that there was no statistically significant association between attendance and the perceived cost and benefits of breast self examination; even though a greater proportion of those who felt that breast self-examination was beneficial attended more compared with those who were more doubtful about the value of breast self examination. Similarly, women who have a lot of faith in medicine and who felt they could reduce their chances of getting breast cancer were more likely to attend than either those who were more skeptical about modern medicine or those who did not feel that they could do anything to stop themselves from getting breast cancer.

Other studies also showed that perception of benefits is related to patients compliance with treatment. Both Elling (1960) and Heinzelmann (1962), reported positive associations between belief in the ability of penicillin to prevent recurrence of rheumatic fever and adherence to the regimen. Becker et. al. (1974) in their study of a new approach to explaining sick-role behaviour in low-income populations, found that belief in efficacy of clinic medications predicted regular administration of the penicillin and that belief in doctors' ability to cure illness (on a list) was related to keeping clinic appointments.

AVENUES SOUGHT FOR TREATMENT

MODERN MEDICINE

The history and development of modern medicine is closely linked with the story of man's effort to fight against diseases. Hippocrates born in 460 B.C. was one of the first physician to admit the natural causes of diseases and he is regarded as the father of modern medicine (Hughes and Marshall, 1974). The modern medicine is otherwise known as the western form of medical treatment. This type

of treatment is being given by qualified medical doctors and nurses in a medically approved place. Sometimes, such service are given by unqualified patent medicine sellers and through self medication.

Modern medicine holds the germ theory as its central theme on the infectious disease causative factors. Based on this theory, the approach to solving health problems using this means of treatment is always scientific. The approach is in turn, based on the evidences deduced from scientific researches. As a result of this approach of solving health problems, many diseases known to mankind today are now getting extinated in the world or being brought under control, such diseases include small-pox, chicken-pox and many others. Except for a few isolated and backward areas, diseases such as plague, cholera and yellow-fever do not cause death on the vast scale as they use to, in the past, (Godman, 1962). Among the remarkable achievement of modern medicine are heart transplant, kidney transplant, eye transplant, and test-tube babies (Oshivere, 1982).

Despite the great achievements of modern medicine, there are other problems which are being encountered by the operation of the system which tends to make individuals lose confidence or consult other sources or avenues for treatment. Among the short-comings of the modern medicine are the shortages of personnel and drugs. Modern medical care centres are far below the needs of the vast majority of the people of Nigeria. Besides, modern hospital facilities are concentrated in urban centres. Thus it becomes more difficult for the rural community to enjoy the modern hospital facilities.

Hackett (1979), observed that hospital services in urban areas remain very over-loaded, and even when they are relatively well developed in cities such as Lagos, poor living conditions may tend to offset their benefits. Apart from the un-even distribution of these facilities, there is also the shortage of personnels such as doctors, nurses, laboratory technologists and other hospital personnels, in the hospitals. In addition, the costs for obtaining treatment are in many cases prohibitively high for the average patient.

The problem of manpower in health care delivery system in Nigeria is enormous. Figures for Nigeria by 1984 according to Ifedi (1984), was about 3,500 hospitals, with about 30,000 beds and 2,600 medical doctors with about 900 pharmacists for a population of over 80 million people. With these shortages, individuals sometimes get frustrated in the process of seeking medical care which in turn leads to lack of confidence in the entire system. Connected with this problem, is the problem of shortage of drugs. In most of the public hospitals, drugs are not readily available. Patients are usually asked to go to patent medicine stores to purchase their drugs. In some areas distances to the nearest health centre or hospital are so far that many thousands of Nigerians have no prospects of seeing a medical doctor throughout their life span (Adejumo, 1985).

TRADITIONAL MEDICINE

Harley (1970), writing on the native idea of medicine and how it works in Africa observed that although the native African has stumbled upon many valuable remedies, he does not think of them as drugs in a scientific way at all. He believes that the typical native African thinks of them as mysterious substances, and the medicine-man is everywhere essentially one who knows how to control

mysteries.

In the literature describing the culture of African peoples, according to Harley (1970), the medicine-man is by far the most prominent figure. When he is seen passing by, he is often seen more or less like a magician, but as the anthropologist has observed him more deeply, he is revealed as a man of many arts. In practising these various arts, he believes firmly in magic of various sorts, and in his own ability to utilize magical forces. With these strong beliefs and affiliation to the art of traditional medicine, the average African has strong belief in the benefits derives from a traditional treatment. In fact, evidences abound, pointing to a tremendous number of valuable remedies in African medical practice. These remedies are not only found mingled with the magic of the medicine man, but utilized in the routine care of the family by many families.

One very important aspect of treatment is to have an idea on the possible cause or causes of the illness. This concept of causative agent determines where one goes to seek treatment and the belief he will have on the benefit

of treatment. Studies on the native beliefs of the causes of disease in Africa shows the different beliefs of the African.

Gilkes (1970), in his study recognizes four causes namely the spirit of the dead, witchcraft, breaches of taboos, and infidelity of a married couple. Whereas Clements (1970), in his comprehensive study of primitive concepts of disease, recognizes five reasons which primitive man gives as the cause of disease; they are: (1) sorcery (2) breach of taboo; (3) disease object intrusion; (4) spirit intrusion and (5) soul loss. All of these ideas can be found among the African natives, with the emphasis sometimes on one, sometimes on another. Smith and Dale (1970), in their study of Ila speaking people, list the following five causes: (1) natural; (2) witchcraft; (3) broken taboo, (4) ghosts of the dead and (5) acts of God, meaning epidemics and plagues. In general, African natives consider disease as something coming from the outside which may be washed off or eliminated in some other way.

With these notions of the causes of diseases, it then follows that a man, for example, with a broken limb

or a wound, or any other injury that he could understand the cause of, will be a perfect stoic, and endured the pain without complaint, but an attack of say, rheumatism, for instance, the nature which he could not comprehend, at once will get him down and make him terrified in the belief that he was a victim of witchcraft. All of these experiences will greatly influence his perception of treatment benefits, and his belief in the efficiency of traditional medicine.

The efficiency of traditional medicine is not disputed in Africa. Abdel Rasik, the assistant executive secretary of O.A.U., observed that Africans have faith in healers and herbalists and that about 85% of Africans go for traditional medicine (Makinde, 1984). There, the absence of familiar medicine and modern medical facilities does not necessarily mean that the health condition is being neglected. Owen (1973), noted that throughout tropical Africa, people have for generations used plants and plant derivatives and less frequently special extracts from animals, as remedies for ill-health.

Ladejobi (1982), was of the opinion that the practice of traditional medicine has been with us ever since the human being was able to recognize probably by instinct and outlives by trying the different physiological properties of plants in his environment. Mume (1973), also commenting on the origin of traditional medicine believed that the actual practice of traditional medicine originated with the juju priest who always directed the burning of smelling substances of herbal materials to produce nice incense to appease the gods of medicine. He also identified eight categories of traditional medicine, which includes herbalism, hydrotherapy, massage, blood-letting, faith healing, surgery, heat therapy and fasting. These are the various aspects of this type of treatment which attracts certain individuals to go for treatment, depending on the nature of their illness.

Ademuwagun (1978), observed that people particularly the illiterate and semi-illiterate consider the orthodox and traditional processes as complimentary. Mume (1973), explaining the reasons for this type of attitude explained that the philosophy of modern medicine centres on the study of disease and how to suppress it, while the tradi-

tional medicine centres on the study of health and how to prevent and cure diseases. Therefore, while a modern doctor will be interested in the prognosis of diseases, the traditional medicine-man will be interested in the overall circumstances of the sick person.

The traditional medicine concept of disease is so fundamentally different from that of modern medicine, Nigeria needs to take another look at it, with a view of integrating it into the country's medical system.

In Traditional medicine, disease is seen as the result of attending some god or the evil doing of our enemies. Consequently, treatment is the combination of superstition the supernatural and herbs. Emphasis is not on the pharmacological action of the herbs, but on the supernatural direction in the choice of the herbs. Divinations, religion and magic are the back-bone of traditional medicine. This type of belief on traditional medicine has led a good number of Nigerians

to consult native doctors either for protection against their enemies or for cures of imaginary or real illness.

The criticism that the traditional healing delays consultation with modern doctor was rebuked by Frankeberg and Leason (1975), when they argued that about one-third of the patients who consult traditional healers had gone first to a modern medicine agent. Various governments ^{are} given recognition to traditional medicine and pharmacopaeia throughout the world, including even the World Health Organization. Some people have even started recommending traditional medicine as an alternative to modern medicine in view of the gross shortage of modern medicine in the country. Countries like China and India have started moving towards integration, but the western trained Nigerian doctors are putting a clog in the wheel of change in Nigeria. With co-operation, the two systems of treatment could be used to achieve greater things in the field of health.

The World Health Organization has issued several directives on the need for the developing countries to utilize the traditional healers in solving some health problems of their people. By far, the most pointed of these directives was the one issued in 1975. Resolution 28:88 of the twenty-eighth World ^{health} Assembly, in which the World Health Organization enjoined member nations to utilize local resources and the services of traditional healers.

Direct as most of these suggestive ideas were, the World Health Organization usually avoid specifics, this is because of cultural, social, economic and political differences of member states. Accordingly, member nations are expected to tailor the blanket directive to suit their own social, cultural and economic uniqueness. With this content, therefore, it should be noted that the place one goes for treatment depends to a large extent on the value or benefits he hopes to derive from such treatment places.

SPIRITUAL CHURCH HEALING

Bolaji (1967), expressed that religion is necessary to medicine, because the belief is that only the maker can remake. Repair to the damage done to mind and body can affect wholeness in man's being. The religious concept of diseases is found in the Old Testament of the Holy Bible; where disease is considered as the wrath of God, to be removed only by painful moral reform, prayers and sacrifice and it is God who confers both health and disease according to his divine and unpredictable will.

Life schedules permit that a human being can be a saviour of a fellow human in times of ill-health, but it all depends on the one that is bestowed by God with spiritual powers. An example of this divinely caused disease and prayer is the case of Hezekiah in the Bible. Hezekiah was severely ill and prayed to God for his health. His prayers was overheard by Prophet Isaiah, who begged and obtained divine acquiescence to help him. Isaiah ordered that a lump of figs be applied to Hezekiah's

afflicted parts, with the result that the ailing man was restored to health (Tamayo, 1977).

Some of the common features of the spiritual churches as identified by Udo (1981) are that:

- (1) they all claim to heal the sick and infirm with the help of prayers;
- (2) they all claim to be spiritual churches and are in direct communication with Christ and God;
- (3) they all claim to have numbers of seizures during which they fall into ecstasy;
- (4) they all sing and dance to tunes which are very African in nature;
- (5) in most cases they adore themselves in white as a symbol of purity.

Hackett (1981), wrote that some sickness are now recognised in the West to be psycho-somatic, such as migraine, ulcer, certain types of paralysis, body aches and pains, and that some infectious diseases can also be due to the frame of mind. In these area of affective

need, Hackett (1981), pointed out that the pastoral care system of the Aladura Churches may be especially beneficial. In almost all cases of spiritual healing, there is diagnosis of each case of illness which is followed by ritual prescriptions such as special prayer, use of holy water or candles and in each case the patient is engaged in the business of his own cure. Moreover, the treatment process also involves spiritual music, drumming and dancing which have therapeutic effect on the patient.

Adejumo (1982) found out that more illiterate, female and old people patronise spiritual churches for health problems than the literate, male and young people. Baeta (1967), criticized the activities of the healing sects, pointing out that the processes of healing is practised with unrelenting empty garrulousness, ignorance, credulity, charlatanism and fraud. Nonetheless, the main idea behind this type of treatment, is that people have confidence and believed that they will derived benefits from the treatment. It is the faith they have in the churches that leads

them to seeking cure in form of miracles from them.

MUSLIM MEDICINE/MUSLIM PRIEST

Not much literature is available on this methods of treatment, it is a newly emerging method for treatment which mixes the traditional practices with Islamic religion. Adejumo (1982), identified the muslim priest as another alternative avenue for treatment sought by the inhabitants of Oyo. The practice of this type of treatment involves the writing of Arabic words on papers which is then folded and wrapped with leather of black, white or red colour which will be carried on the body. It may also involve drinking or bathing with Koranic words robbed off from slate. Evidently, many local beliefs infiltrated into this practice.

This type of practice i.e. muslim medicine is not exclusively for curative purposes, it is also sought for protection against witches; acquisition success in business or occupation, good luck, promotion and love; identification of a thief, and solutions to a lot of

other social and emotional problems.

The client or the people who consult the muslim priest are not necessarily muslims alone. Anybody who has faith in the practice can go there for cure or to solve his or her problems.

It can be concluded therefore as shown by Roghman and Haggerty (1973), and Tessler and Associates (1976), that increased utilization of certain types of health services was associated with minor everyday stress; and that there exist a significant positive relationship between psychological distress and utilization of primary health care services. Hence stress affects the utilization of health services even when the influence of a variety of other variables are controlled.

COMPLIANCE TO TREATMENT

Implicit images of human behaviour influence most research endeavours. Studies of patient's "compliance" with doctors' instructions or treatment procedures have generally used an ideal image of the patient as a passive

obedient and unquestioning recipient of medical instructions. Divergence from this ideal 'defaulting' - is seen as irrational in the light of medical rationality. The blame for default is seen as lying with the patient.

A lot of studies have been carried on to show the pattern of compliance of patients. Becker and Associates (1972) observed that disturbingly, low rates of co-operation or compliance with prescribed medical regimens in both preventive and curative paediatric situations have been well documented in studies carried out by Elling et. al. (1960); Feinstein e. al. (1959) and Gordis et. al. (1969). These studies examined non-compliance in a variety of pediatric settings, covering many illness and therapies, with patient samples drawn from diverse geographic, demographic and social class strata. Several major patterns have emerged that cut across study settings, illness and type of patient.

The attitude of non-compliance presents a major obstacle in treatment success. Tare (1975), studied leprosy patients and found out that the biggest difficulty

in the successful implementation of leprosy control programme is the non-cooperation of the patient, leading to drop out in the treatment. He observed that the patient whom they want to help, is not willing to be helped. He does not want to co-operate in the registration and continuation of treatment. Even though the patients were repeatedly persuaded to attend the clinic at regular intervals for continuation of treatment, it was observed that about 40% of the patients who had registered in a leprosy clinic were found to be drop-outs. Most serious is the fact that the drop outs are those patients in which disability could be prevented, their developing resistance to dapsone prevented their viability of spreading the disease curtailed and of course, the duration of them going for treatment could be reduced.

Becker and Associates (1972), in their study of predicting mother's compliance with paediatric regimens found out that mothers' adherence to medical instructions concerning their children was typically very inadequate, especially for episodes of acute illness. This study, tests a new

behavioural model which employs mothers health motivations, perceptions and attitudes as predictors of giving oral penicillin and keeping follow-up appointments for Otitis media. The findings shows that compliance is especially poor in paediatric clinic populations and that non-compliance is not observed exclusively among clinic of low-income populations. Similar results were found by Bergman and Werner (1963).

Another aspect of compliance frequently studied is patients behaviour in regard to not taking their drugs. Bonnar and associates (1969), found that 32% of the subjects studied were not taking their iron tablets. Epstein and Cluss (1982), reported that Bergman and Werner (1963), found that 56% of out-patient children prescribed a 10-day regimen of penicillin had dropped taking the drug by day-3 and that a full 82% were non-compliant by day-9. The consequences of this non-compliance to prescribed medical treatment may be quite serious, including exacerbation of disability and progression of the disease (Steward and Cluff, 1972). Also, Davis and Yin Yeun (1981), studied

dapsone compliance in North-east India and discovered like other studies, that there was poor compliance and that many patients fail to appreciate that their running out of dapsone tablets was often a consequence of missed out-patient clinic appointments. Similar results of non-compliance were found in studies of Low and associates (1974), Huikeshoven and others (1976) and Elland and associates (1981).

Nyazema (1984), in his study based on the in-depth interviews of hypertensive and diabetic patients attending out-patient clinics, found that patients had different ideas and attitudes about the use of medicine. Well over 60% of patients interviewed lacked comprehension of their disease and the use of the medicine prescribed to them. Some have even stopped taking their treatment and had gone to the traditional healer with their problem. The result from this study shows that medicine taking is highly an individualistic phenomenon; health practitioners may control which drugs the patient gets and how much of them,

but he is not present to control how they are used. People have ideas and attitudes about the use of medicines.

There are other studies which on the other hand studied factors which affect compliance to treatment. One of such studies is that of Macdonald and others (1963), where they studied social factors in relation to participation in follow-up care of rheumatic fever. They found out that three general factors were associated with the quality of co-operation, these are: social circumstances, illness of others in the family which interferes markedly with good participation and the quality of interpersonal relations, which shows that good interpersonal relations within the family tend to predict good co-operation and that problems and interpersonal conflict tend to predict the reverse.

Davis (1966), observed that there is not always agreement about what personal attributes characterize a compliant or a non-compliant rheumatic fever patient. However, he found that there appears to be no relationship between

compliance and age; that a sex variation existed with non-compliance: females were least likely to comply and that there is relationship between socio-economic status and compliance. Elling and associates (1960), measured participation in treatment by the regularity with which the patient took pills and kept appointments and discovered that in the situation where the availability of the programme was assured, family income and family social class position showed no statistically significant relationship to degree of participation. Also certain family characteristics such as, social class structure, residential stability and ethnic background, were significantly related to conceptions of rheumatic fever and penicillin and to the degree of participation.

Available evidence suggest that the compliance of hospitalized and non-hospitalized, ambulatory patients is subject to a host of social and psychological influences beyond those exerted by the medical doctor. Davis and Eichhorn (1963), in their study of males with cardiovascular impairment as determined by medical examinations, found

that the factors affecting change in compliance included attitude toward health, work orientation, length of time impaired, age of respondent, and doctor-patient relationship. Ross and Duff (1982), also agreed with the findings of this study.

Koos (1954), reported that persons in the lower economic class were less likely to visit a doctor than were those in the upper class; while Wilson and White (1977) found that the poor had the highest utilization rates. Soladoye (1980), studied factors which made patients suffering from pulmonary tuberculosis to default from treatment. The findings showed that drop out from treatment was not associated with lack of knowledge of the seriousness of the disease or the danger the disease poses, but that the high cost of transportation to and from the hospital, behavioural factors such as the patient's beliefs, the unsympathetic attitude of the hospital staff and poor communication and interaction between patient and staff among others, were found to be associated with non-utilization and non-compliance.

Even though a lot of studies indicated that compliance rates were very low, there are some studies which showed high to compliance among patients. Arnhold and associates (1970), for instance studied patients and prescriptions and found that of the 104 subjects studied only 15 of them were non-compliers. Also Francis and others (1969) studied patients' response to medical advise. Their result showed that of the 800 subjects used for the study, 11% were non-compliant and about 89% were compliant. Among the reasons given by the patients for non-compliance were the extent to which patient's expectations from the medical visit were left unmet, lack of warmth in the doctor-patient relationship and failure to receive an explanation of diagnosis, complexity of the medical regimen and other practical obstacles.

Glanze and others (1984), studied compliance with an experimental drug regimen for treatment of Asthma. Of the 102 cases understudied, 25.5% were excluded from analysis because they were lost to follow-up and only 10.8% of the

remaining were non-compliers the rest were compliers. Based on data for compliers, the drugs were found to reduce relapse rates, and asthma symptomatology; when non-compliers were included in the analysis, the steroid drug appeared in effective for reducing relapses and less effective for improving overall status.

Becker and associates (1977), used the health belief model to predict dietary compliance by mothers of obese children. Based on the study, the health belief model (H.B.M.) appears to be useful in the explanation and prediction of a mother's adherence to a diet regimen prescribed for her child. Perceptions related to health motives, to threat (i.e. to susceptibility and severity, whether general or weight - specific) and to benefit of and barriers to the diet, show positive relationships to weight loss. Except for "age of child," and "mothers marital status" subject's personal characteristics were unrelated to compliance. Supporting this study with the facts on characteristics of the patient and compliance,

the works of Williams et al. (1967), Finnerty (1973) and Carpenter (1976), all indicated that the educational level of the patient appear to be uniformly unassociated with compliance in hypertension, diabetes and cardiac conditions. The same goes with age, sex, knowledge of medical regimen and religion. Only occupation as shown by Finnerty (1973) seem to have little positive association with compliance.

Attempts made to identify the various features associated with treatment compliance and or default has been yielding conflicting results. However, the pattern seems to follow the notion that defaulting rates are on the higher side. For instance Williams and Martin (1967) concluded that 66% of the patients, from a clinical diabetic control study, whose control status could be classified, were considered to be in "poor control" or were defaulters while only 34% were "well controlled" or compliant of the prescribed therapy. On the same vein, Ambuel and others (1964), looked into urgency, as a factor in clinic attend-

ance so as to be able to identify those who break clinic appointments and why. The result showed that the broken appointment range from 10% for urgent appointments, to 19% for intermediate appointments, to 30% for routine ones. This result supported their hypothesis that urgent appointments would be broken less than routine ones. They thus concluded that medical urgency is one of the most powerful influences on clinic attendance.

Meinert and others (1970) however, in their study of diabetics patients in their completeness of follow-up showed a positive result. In their study, patients were expected to return every three months after initiation of treatment for re-evaluation and for a quarterly follow-up examination. A quarterly follow-up examination was regarded as missed if it was not done within forty-five days of the date specified for that particular examination. By this criterion, only 17% of all scheduled quarterly follow-up examination have been missed. This study shows that the rate of compliance is high among the patients.

Blackwell (1972) highlighted some studies which focused on some factors associated with drug default because according to him it has not been possible to identify an uncooperative type of patients. Every patient is a potential defaulter and compliance can never be assumed. Among the factors associated with drug default, according to his study, is medication. Porter (1969), found that duration of treatment was negatively correlated with taking iron pills in 62% of pregnant women. This suggests that the length of time of treatment may encourage deviation in relatively trivial illnesses but not in life-threatening conditions.

Porter (1967), also finds a consistent result that the supervisory role of a partner or spouse aids in ensuring that medication is taken as ordered. He found that living alone made the major contribution to non-compliance in general practice. Hare and Willcox (1969) also showed that the incidence of drug defaulting increases progressively from 19% among in-patients, 37% among day patients

to 48% among out patients in the same hospital, showing that the setting could also affect compliance. Similarly Irwin and associates (1971), found the deviation to be 7% for schizophrenics in a closed ward compared to 32% in an open ward setting.

In studying the effects of health education methods on appointment breaking, Glogow (1970), observed that medical non-compliance can lead to irreversible health changes in the patient and the loss of health and life itself. Davis (1967), similarly reported that non-compliance rates range from 15-93%. He stated that at least a third of the patients in most studies, fail to comply with their physician's orders. As a result of his findings, Glogow (1970), concluded that what is important in reducing broken appointments is not what the client is taught or told, but the manner in which the information is conveyed. Confirming the high rates of drop outs or non-compliance, Caldwell and others (1970), reported that in an antihypertensive treatment of 76 patients, by the 11th month of treatment 50% of the patients studied had been lost from the clinic and by 5 years 74% had dropped out, 9% had died and only 17% were remaining in treatment.

Drug defaulting may take a number of forms, of which failure to take the prescribed amounts and failure to go for treatment are the most common. In most of the studies carried out using different methods, 25 to 50% of the population studied was shown to consist of defaulters. Episodic or excessive medication may also occur (Blackwell, 1972).

Malahy (1966), categorized the errors made by medical outpatients into four groups, namely; errors of omission, errors of purpose (taking medicine for the wrong reason), errors of dosage, and errors in timing or sequence. Schwartz and associates (1962), followed a similar classification when recording the errors made by chronically ill geriatric patients, but they added a group who took additional medications not prescribed by the doctor.

Other consequences of non-compliance include the economic wastage involved and the hazard to health posed to the remaining people.

CHAPTER THREE

RESEARCH METHODS AND PROCEDURE

The purpose of this study was to examine the impacts of perceived severity of sickness and benefit of treatment in relation to compliance to treatment of leprosy patients in Sokoto State. The study also looked into the interactive effects of perceived severity of sickness and benefits of treatment on compliance behaviour of the leprosy patients. These were achieved by testing the hypothesis stated in chapter one.

Population:

The broad population for this study was made up of all leprosy patients in Sokoto State.

The State is made up of five administrative divisions with 19 local government areas. All the five administrative divisions had a total number of 47,811 registered leprosy patients by March, 1986 as shown in table 3.1 below.

TABLE 3.1

NUMBER AND PERCENTAGES OF REGISTERED LEPROSY PATIENTS BY DIVISIONS IN SOKOTO STATE (MARCH 1986)

DIVISION	NO	PERCENTAGE
Argungu	3,127	6.54
Gwandu	7,882	16.48
Sokoto	29,388	61.47
Yauri	1,439	3.01
Zuru	5,975	12.50
Total	47,811	100

Source: Sokoto State Ministry of Health Statistical Section.

Sample Size

The Sample Size for this study comprised 952 leprosy patients from Argungu, Sokoto and Zuru administrative divisions of Sokoto State.

The reason for selecting samples from three out of the five administrative divisions, was the need for geographical spread of the sample to cover both the urban and rural areas of the State. It also enabled the research to cover the three major ethnic groups (i.e. Hausa, Fulani and Dakankari), in the State.

The total number of registered leprosy patients in the three divisions was 38,490. The 952 respondents represented 2.47 percent of patients in the three divisions. The criterion for the distribution of the subjects was based on the population of the registered leprosy patients of the divisions investigated.

In each of the three divisions investigated, different proportional representations of the registered leprosy patients were selected as samples as shown in table 3.2 below.

TABLE 3.2

NUMBER AND PERCENTAGE DISTRIBUTION OF
RESPONDENTS BY DIVISIONS

Division	No. of Registered Patients	No. of Samples Selected	% of sample in relation to total sample selec.	% of sample in relation to total registered patients in the State
Argungu	3,127	77	8	0.16
Sokoto	29,388	712	75	1.49
Zuru	5,975	163	17	0.34
Total	38,490	952	100	1.99

Table 3.2 clearly indicates the mode of distribution of the subjects in each of the divisions for this study. Samples were selected based on the percentages of the registered patients in relation to the total number of registered patients in the three divisions. In Argungu division 77 samples representing 8 percent of the total samples were selected, in Sokoto division 712 samples or 75% of the total samples were used and in Zuru division, 163 samples or 17% of the total samples were selected. In Sokoto division, 712 out of 725 samples were used because the responses from 13 respondents were unuseable due to incomplete informations given by the respondents.

In each of the divisions, 2.47 per cent of samples were selected from the total number of registered patients in the division. The 952 subjects used in this study represented about 1.99 percent of the total number of registered patients in the state.

Among the reasons for using different proportional representation in relation to the total samples selected in each of the divisions were that, in the first place, if equal percentages were selected, Sokoto division which

has a high number of registered patients might have very few samples selected when compared with the other divisions, i.e. if 8% of the total samples were to be selected from Sokoto division as was the case with Argungu division. Equally, if the high percentage that was selected from Sokoto were to be selected from either Argungu or Zuru, the two divisions would have a large number of samples when compared to the total number of registered patients. The high number would have been unmanageable within the resources and time available to the researcher.

Another reason for varying the percentages in the different divisions in relation to the population of registered leprosy patients was that both Argungu and Zuru divisions are made up of one local government areas each, while Sokoto division alone is made up of twelve local government areas. This meant that Sokoto division has the greatest area coverage and number of leprosy patients in the whole state. The high percentage of samples used in Sokoto division therefore, enables the researcher to cover a wide area in the state, which is the appropriate thing to do.

Festinger and Keatz (1966) opined that, in as much as the size of sample can affect the outcome of research findings, what is most important when dealing with populations of this nature is the sampling technique. They also gave an example of a study, in a gallop poll, which used 20,000 subjects and which the result have been accurate enough to predict the outcome of American election which involved more than 100 million voters.

Sampling Technique

In this study, the researcher was aware of the importance of selecting a representative sample and efforts were made to limit the probability of choosing a biased sample in order to ensure adequate representativeness of the sample.

The sampling technique used for this study was the cluster sampling technique. This method according to Best and Kahn (1986) is mostly used by survey researchers to avoid difficulties of compiling a complete list of the entire population. This method incorporates the features of random sampling and area sampling. Best and Kahn (1986)

also believed that this method is appropriate when the population of interest is infinite or when the geographic distribution of the individuals is widely scattered.

In selecting the samples for this study, using the cluster sampling technique, the first step taken was to select sampling units of manageable cluster. This was the selection of three out of the five administrative divisions in the State. The simple random sampling technique (balloting) was used to select the three administrative divisions used, which were Argungu, Sokoto and Zuru divisions. Then from the three divisions, all local government areas were listed. In the case of Argungu and Zuru which have one local government area each, the local government areas were used for the study. In the case of Sokoto division, which has twelve local government areas, a random sample of six local government areas were selected based on the geographical spread of the division and the divisions six zonal areas of health operations. Each zonal health operation area covers two local government areas.

From the local government areas selected, a list of all registered and unregistered leprosy patients was compiled and using the systematic random sampling technique,

77 leprosy patients were selected from Argungu division, 163 respondents from Zuru division and 712 respondents from Sokoto division.

In Sokoto division, the respondents were made up of 120 respondents each from Anka, Gwadabawa, and Sokoto local government areas, and 118 respondents each from Gusau and Kaura-Namoda local government areas while Gummi local government area had 116 respondents used for the study. The researcher selected or interviewed 120 respondents from each of the six local government areas in the division but only the figures given above were valid or useable for the study.

The compiled list of registered leprosy patients were obtained from the officers in-charge of leprosy sections of the health departments of each local government areas. The list of those unregistered respondents were compiled by the researcher with the help of village and ward heads, and the research assistants used by the researcher. This sampling technique gives every member of the population equal chance of being sampled.

Research Instrument:

The main research instrument in this study was structured interview. 952 respondents were interviewed for the study. The interview is in a sense an oral questionnaire where instead of writing the responses, the respondents or interviewees give the needed information orally and face to face.

This method of data gathering is unique because, according to Borg and Gall (1979), it involves the collection of data through direct verbal interaction between individuals. It also has the advantage of adaptability. Moreover, Babbie (1975) believes that interviews provide a guard against confusing questionnaire items. The interview technique affords the researcher the opportunity to explain more explicitly the purpose and just what information he wanted. The research instrument is shown in Appendix C.

Development of Instrument:

In order to develop an appropriate instrument for this study, it was necessary for the researcher to carryout a review of some questionnaire items used in related studies.

The work of Rosenstock (1974) was of tremendous value. There, the specific questions asked by Kegeles (1963), Heinzelmann (1962) and Leventhal (1960) for perceived severity of sickness and those of Hochbaum (1958), Kegeles (1963), Flach (1960) and Heinzelmann (1962) for perceived benefit of treatment were reviewed.

These studies, according to Rosenstock (1974), greatly influenced the development of the health belief variables. The works of Kirscht and others (1966) and Haefner and associates (1967) were also studied.

The specific areas which were investigated and for which data collection instrument was developed included the following:

- (a) socio-demographics
- (b) perceived severity of sickness
- (c) perceived benefit of treatment
- (d) compliance behaviour towards leprosy treatment.

A draft set of questions or questionnaire items was developed by the researcher for each of the above parameters. In view of the descriptive nature of the study, the questions were designed to give opportunities for open-ended and close-ended responses.

The sets of questions were therefore grouped into four parts. The part one questions on socio-demographic variables, were open-ended questions. The design of questions in parts two and three were close-ended questions on a five-point likert scale on perceived severity of sickness and perceived benefit of treatment respectively; while part four contained the open-ended questions which were intended to elicit responses on the respondent's compliance behaviour.

After the initial draft set of questions were developed, the face validity of the instrument was ascertained through a proper scrutiny by the researcher's supervisor, lecturers in the Departments of Physical and Health Education, Preventive and Social Medicine, University College Hospital Ibadan, and lecturers in other relevant disciplines. The instrument was modified, based on the comments and recommendations of these people. The modified instrument was then discussed with the researcher's supervisor. The discussions lead to further work on the instrument before a final draft was produced for the pilot study.

Additional method of ensuring correct responses was the design or translation of the instrument into the Hausa language because majority of the respondents were illiterates

The vernacular version of the questions was prepared by the lecturers of the Hausa Departments of the College of Education Sokoto, and University of Sokoto. The test-re-test method was used to test the reliability of the instrument.

Pilot Study

In order to further validate the research instrument a pilot study was conducted on selected subjects who were part of the targeted population of interest but were excluded in the sample selected for the study.

Fifty subjects were selected from Sokoto town, the headquarters of Sokoto division and also the State capital. The subjects were patients found on the streets and public places begging for alms.

The 50 subjects were selected using the volunteer sampling method. This method of sampling was used because some of the leprosy patients refused to participate in the study. They were afraid that government was planning to remove them from the street and take them to leprosy camps. Others were demanding money before they could be interviewed. This method of sampling is the most appropriate in this type of situation as noted by Borg and Gall (1979), who believe that even if the researcher selects a random sample "he can

rarely get co-operation from all the subjects selected.

The pilot study helped to improve and validate the research instrument.

Procedure for Data Collection

Collection of data involved writing initially to the Chief Medical Officer of the Sokoto State Ministry of Health, Sokoto to solicit his co-operation and those of his officers in-charge of the leprosy department in the various local government area offices. A copy of the letter written is shown in appendix ^A.... and his response is shown in appendix ^B.....

The interviews were conducted with the aid of six selected and trained assistants. The six selected and trained assistants ^{were} workers of the State's Leprosarium Hospital in Amanawa, Sokoto. The assistants were properly trained on how to enter the responses on the prepared interview forms.

The responses given by the respondents were appropriately entered into the prepared forms as interviews were being carried out.

Data Analysis

The result of the findings which were collected from the structured interviews was grouped under the two variables that were investigated. The perceived severity of sickness and perceived benefit of treatment. The analysis also showed the demographic characteristics of the respondents.

Simple statistical analysis of data were used in the analysis. The main statistical tool for the analysis was the chi-square (χ^2). Kerlinger (1979) emphatically stated that one of the best ways of conducting research designed to analyse relationships is chi-square. The data for the socio-demographic questions numbers one to twelve of section A of the interview were descriptively analyzed.

In this study, nominal scales were used. These scales basically do not measure but rather name. In other words, observations were simply classified into categories with no necessary relationship existing between the categories. The data therefore, did not lend itself to easy calculation. It is for example inappropriate to allocate value to those who perceived their sickness very severe or those who complied. It was therefore, not possible to get a single

total score for each respondent from which the deviations for the mean score could be calculated. Hence the use of chi-square as the main statistical tool.

However, despite the shortcomings of chi-square as not being able to describe the direction of difference and not being as powerful as some other parametric tools, it has its own advantages in that it is easy to understand, and it can be used for two or more samples, and for skewed and abnormal distribution. Also, sample scores can be calculated directly from raw score and not necessarily from percentages, means and deviations. All these, far outweighs its disadvantages, hence its application in this study. This is probably why, according to Norcliffe (1979), it is the most frequently used of all statistical test.

In this study, participants were stratified by severity of sickness, benefit of treatment and compliance behaviour. Both severity of sickness and benefit of treatment were determined by a composite score of the respondents in sections B and C of the interview. In these sections, which contained the close-ended statements, the respondents

were required to examine each statement and then indicate their opinion by scoring the way they felt on a five-point scale of strongly agreed, Agreed, Not sure, Disagreed and Strongly Disagreed. The scores for positive statements were interpreted as follows:

5 for strongly Agreed

4 for Agreed

3 for Not sure

2 for Disagreed

1 for Strongly Disagreed

The scores for negative statements were interpreted in the reverse order.

Section 3 of the interview schedule was the perceived severity of sickness section and was made-up of eleven statements which gave a maximum of 55 points. Severity was therefore categorized based on the severity score. The range was as follows:

44 to 55 = Very Severe

23 to 43 = Moderately Severe

10 to 22 = Not Severe.

In the same way, response for Section C was for perceived benefit of treatment made up of 10 statements which

give a maximum scores of 50 points. The range was as follows:

40	-	50	-	Very beneficial
21	-	39	-	Somewhat beneficial
10	-	20	-	Not beneficial

This method of categorization has been used in other similar studies and has been respondents in this type of study (Hindi-Alexander, 1987)

With regards to the dependent variable of compliance, respondents were categorized as either complying to treatment or not complying to treatment. The basis of stratification was the respondents response to how often they went for treatment, when last were they in the clinic and when next was their appointment in the clinic. All those who indicated a weekly appointment i were classified as compliers and all those who indicated anything more or less than weekly attendance at clinics were classified as non compliers. This was based on the fact that in Sokoto State, treatment of leprosy cases was done on a weekly basis, and drugs that will last for one week were only given to the patients.

A level of significance of 0.05 was used to test the sub-hypotheses.

CHAPTER FOUR

ANALYSIS OF DATA, RESULTS AND DISCUSSION

The purpose of this study was to examine the impacts of perceived severity of sickness and benefit of treatment in relation to compliance of leprosy patients in Sokoto State. The study also looked into the interactive effects of perceived severity of sickness and benefit of treatment on compliance of the various groups of leprosy patients. This chapter presents the analysis of the data collected in this study, the results and discussion. These are reported in three sections.

The first section presents socio-demographic characteristics of the respondents. This covers the sex, age, religion, ethnic origin, marital status, educational level, time leprosy was discovered, mode of discovery of leprosy, and causes of leprosy of the respondents.

The second section presents the analysis of the respondents' perceived severity of sickness and benefit of treatment on compliance to treatment. Data relating to each hypothesis were presented in tables and tested for significant difference.

The third section dealt with discussions of the findings in relation to the review of literature related to this study.

TABLE 4.1
FREQUENCY DISTRIBUTION OF RESPONDENTS BY
SEX, AGE AND RELIGION

CHARACTERISTICS	NO.	%
Total	952	100
Sex: Male	406	43
Female	546	57
Age: Less than 20 years	7	1
21-30 years	276	29
31-40 years	390	41
41-50 years	269	28
51 years and above	10	1
Religion: Islam	771	80
Christianity	83	9
Traditional	94	10
No response	4	1

As shown in table 4.1 above, nine hundred and fifty-two leprosy patients were interviewed for this study and

adequate information was obtained on all of them. This represented 100 percent of the total respondents; which was made possible because of the data gathering technique used by the researcher.

Out of the 952 respondents used for this study, 406 or 43% of them were males while 546 or 57% of them were females. Majority of the respondents, 41%, were between the ages of 31-40 years while only 1% of them were above 50 years of age. Similarly, only 1% of the respondents were less than 20 years of age.

Predominant number of the respondents, 81%, belong to the Islamic religion while 10% belong to the traditional religion, and only 9% were christians.

TABLE 4.2

FREQUENCY DISTRIBUTION OF RESPONDENTS BY ETHNIC ORIGIN, MARITAL STATUS AND EDUCATIONAL LEVEL

CHARACTERISTICS	NO.	%
TOTAL	952	100
Ethnic Origin:		
Hausa	490	51
Fulani	175	18
Dakarwari	198	21
Gungawa	81	9
Others	7	0.7
No response	1	0.1
Marital Status:		
Single	8	1
Married	652	68
Divorced	79	8
Widowed	210	22
No response	3	0.3
Educational level:		
No formal education	894	94
Primary School education	41	4
Secondary Sch. education	12	1
Post-Sec. Sch. education	-	-
No response	5	0.5

Data in table 4.2 showed that about half of the subjects, 51 percent, were Hausa's by tribe, 18 percent were Fulanis, 21 percent were Dakarkaris and only 9 percent were the Gungawas.

Only 1 percent of the respondents were single while 68 percent were married and 8 percent were divorced. With regards to the respondent's educational level, 94 percent of them had no formal education and none of them, had post-secondary education.

TABLE 4.3

FREQUENCY DISTRIBUTION OF RESPONDENTS BY TIME OF DISCOVERY, MODE OF DISCOVERY AND CAUSE OF LEPROSY

CHARACTERISTICS	NO.	%
TOTAL	952	100
Time leprosy was discovered:		
Less than 1 year	62	6
1-3 years	672	71
4-6 years	169	18
7-9 years	41	4
above 9 years	7	0.7
No response	1	0.1
Mode of Discovery: TOTAL	952	100
Through friends	119	12
Through parents or relatives	629	66
Through medical examination	36	4
Through self-discovery	164	17
Others	1	0.1
No response	2	0.2
Cause of Leprosy: TOTAL	952	100
Eating goat meat	16	2
Evil spirit (witch)	116	12
Hereditary	36	3
Bacteria (Germ)	16	2
Punishment from God	4	0.4
Bathing with hot water after giving birth	135	14
Others: God	629	66

Table 4.3 showed that majority of respondents 71 percent, discovered their disease between 1-3 years, 6 percent discovered it less than a year and 18 percent about 4 to 6 years before this study. 66 percent of the respondents indicated that they discovered they had leprosy through parents and relatives while only 17 percent discovered their disease by themselves.

Majority of the respondents, 66 percent, believed that their disease was caused by God, and 12 percent believed that it was caused by evil spirit or witches. 14 percent believed that the leprosy they have was caused by the hot water they used in taking bath after child birth, while only 2 percent believed that it was caused by a germ.

TABLE 4.4

DISTRIBUTION OF THE LEPROSY PATIENTS AS PER PERCEIVED SEVERITY OF THE DISEASE

SEVERITY	NO.	PERCENTAGE
Very Severe	527	55
Moderately Severe	343	36
Not Severe	82	9
TOTAL	952	100

Table 4.4 shows that 55 percent of the total respondents believed that leprosy is a very severe disease, while 36 percent believed that it is moderately severe and 9 percent believed that it, not to be severe.

TABLE 4.5
DISTRIBUTION OF RESPONDENTS AS PER THEIR PER-
CEIVED BENEFIT OF TREATMENT

BENEFIT	NO	PERCENT
Very Beneficial	96	10
Somewhat Beneficial	313	33
Not Beneficial	543	57
Total	952	100

As indicated in table 4.5 above, only 10 percent of the respondents perceived the treatment of leprosy to be very beneficial, 33 percent perceived it somewhat beneficial and 57 percent of them perceived treatment as not beneficial.

As it has been indicated in tables 4.4 and 4.5, all the respondents have been categorized into the various groups of perceived severity of sickness and benefit of

treatment; based upon their responses to interview items on severity and benefit (Sections B and C of the interview items).

Based on these divisions, the data was analyzed using the dependent variable of compliance. All the respondents were categorized as either complying to treatment or not complying to treatment. Responses to section "D" of the interview items was used to classify the respondents into either complying or non-complying.

These classifications were used to test the earlier outlined hypothesis for this study as follows:

Analysis of Perceived Severity of Sickness on Compliance

SUB-HYPOTHESIS 1

There will be no significant difference in compliance to treatment between leprosy patients who perceive their sickness to be very severe and those who perceive it to be moderately severe.

TABLE 4.6

CHI-SQUARE VALUE AND PERCENTAGE DISTRIBUTION OF THOSE WHO PERCEIVE THEIR SICKNESS TO BE VERY SEVERE AND MODERATELY SEVERE

COMPLIANCE	S E V E R I T Y				TOTAL No.
	Very Severe		Moderately Severe		
	No.	%	No.	%	
Comply	213	40.4	171	49.9	384
Non-comply	314	59.6	172	50.1	486
Total	527	100	343	100	870

$$\chi^2 = 7.13, \text{ df} = 1, P < 0.05$$

Table 4.6 above gives the result for those who perceived their sickness to be very severe and moderately severe. The chi-square value of 7.13 was obtained against the table value of 3.84; the result of the chi-square test is therefore significant, thereby, rejecting the null hypothesis.

This test showed that leprosy patients who perceive their sickness to be moderately severe comply significantly to treatment more than those who perceived it very severe. The percentage distribution of the respondents as shown in the table above

showed that those who perceived their sickness to be moderately severe were better compliers - 49.9 percent, as against 40.4 percent for those who perceived their sickness very severe. However, more than half of those who perceived their sickness very severe 59.6 percent did not comply to treatment. Similarly, 50.1 percent were non-compliers for those who consider their sickness moderately severe.

These figures shows that between the two groups, the better compliers to treatment were those who perceived their sickness to be moderately severe. Thereby rejecting the null hypothesis which states that there will be no significant difference in compliance to treatment between leprosy patients who perceive their sickness to be very severe and those who perceived it to be moderately severe.

SUB-HYPOTHESIS 2

Those who perceived their sickness to be very severe and those who perceived it not severe will not differ significantly in their compliance.

TABLE 4.7

CHI-SQUARE VALUE AND PERCENTAGE DISTRIBUTION OF THOSE WHO PERCEIVED THEIR SICKNESS TO BE VERY SEVERE AND NOT SEVERE

COMPLIANCE	S E V E R I T Y				TOTAL :
	VERY SEVERE		MODERATELY SEVERE		
	NO.	%	NO.	%	
Comply	213	40.4	45	54.9	258
Non-comply	314	59.6	37	45.1	351
Total	527	100	82	100	609

$$X^2 = 5.50, \quad df = 1, \quad P < 0.05$$

The findings here indicated a significant result. The calculated chi-square value of 5.50 is more than the table value of 3.84 at 0.05 level of significance. This result therefore rejected the sub-hypothesis that there is no significant difference in their compliance.

In other words, the result showed that those who perceived their sickness not severe were better compliers than those who perceived it very severe.

Table 4.7 showed that majority of those who perceived their sickness to be very severe 59.6 percent were non-compliers. Whereas, majority of those who perceived their sickness not severe 54.9 percent were compliers.

SUB-HYPOTHESIS 3

There will be no significant difference in compliance between those who perceived their sickness to be moderately severe and those who perceived it not severe.

TABLE 4.8

CHI-SQUARE VALUE AND PERCENTAGE DISTRIBUTION OF THOSE WHO PERCEIVED THEIR SICKNESS TO BE MODERATELY SEVERE AND NOT SEVERE

Compliance	S E V E R E I T Y				Total
	Moderately Severe		Not Severe		
	No.	%	No.	%	
Comply	171	49.9	45	54.9	216
Non-comply	172	50.1	37	45.1	209
Total	343	100	82	100	425

$$\chi^2 = 0.48, \quad df = 1, \quad P < 0.05$$

Examination of table 4.8 indicates a non-significant difference in compliance between those who perceived their sickness to be moderately severe and those who perceived it not severe.

The calculated chi-square value of 0.48 is less than the table value of 3.84 at a significance level of 0.05. Thereby upholding the sub-hypothesis that there is no

significant difference in their compliance to treatment.

The total number of respondents who perceived their sickness to be moderately severe about half of them - 50.1 percent did not comply to treatment and the remaining half 49.9 percent complied to treatment. Similarly, 54.9 percent of those who perceived their sickness not severe complied to treatment and 45.1 percent of them did not comply to treatment.

Analysis of Perceived Benefit of Treatment on Compliance

The data used for testing these sub-hypotheses were in section "C" of the structured interview.

SUB-HYPOTHESIS 4

Those who perceived leprosy treatment to be very beneficial will not comply to treatment than those who perceived it somewhat beneficial.

TABLE 4.9

CHI-SQUARE VALUE AND PERCENTAGE DISTRIBUTION OF THOSE WHO PERCEIVED THEIR TREATMENT TO BE VERY BENEFICIAL AND SOMEWHAT BENEFICIAL

Compliance	BENEFIT OF TREATMENT				Total
	Very Beneficial		Somewhat Beneficial		
	No.	%	No.	%	
Comply	87	90.6	231	73.8	318
Non-comply	9	9.4	82	26.2	91
Total	96	100	313	100	409

$$\chi^2 = 11.06, \quad df = 1 \quad p < 0.05$$

Table 4.9 presents the findings for the respondents who perceived treatment of their leprosy to be very beneficial and somewhat beneficial. The result showed a significant difference in their compliance. The calculated chi-square value of 11.06 was more than the table chi-square value of 3.84 at the 0.05 level of significance.

This result therefore, rejects the sub-hypothesis that there was no significant difference in compliance to treatment between those who perceived benefit of treatment

to be very beneficial and those who perceived it to be somewhat beneficial.

Those who perceived the benefit of treatment to be very beneficial were better compliers - 90.6 per cent of them complied to treatment and just 9.4 per cent of them did not comply to treatment. There was also a high compliance rate for those who perceived the benefit of treatment to be somewhat beneficial - 73.8 per cent, although it is not as high as those who perceived it very beneficial. However, there was a higher non-compliance rate 26.2 per cent among those who perceived treatment to be somewhat beneficial, when compared with 9.4 percent of those who perceived treatment to be very beneficial.

This analysis therefore shows that those leprosy patients who perceived benefit of treatment to be very beneficial comply to treatment more than those who perceived it somewhat beneficial. Thereby rejecting the sub hypothesis.

SUB-HYPOTHESIS 5.

There will be no significant difference in compliance to treatment between those who perceived leprosy treatment to be very beneficial and those who perceived it not beneficial.

TABLE 4.10

CHI-SQUARE VALUE AND PERCENTAGE DISTRIBUTION OF THOSE WHO PERCEIVED THE BENEFIT OF TREATMENT TO BE VERY BENEFICIAL AND NOT BENEFICIAL

Compliance	BENEFIT OF TREATMENT				Total
	Very Beneficial		Not Beneficial		
	NO.	%	No.	%	
Comply	87	90.6	103	19	190
Non-comply	9	9.4	440	81	449
Total	96	100	543	100	639

$$\chi^2 = 200.5, \quad df = 1, \quad P < 0.05$$

Table 4.10 indicates a significant difference in compliance to treatment between the respondents who perceived the benefit of leprosy treatment very beneficial and those who perceived it not beneficial.

The calculated chi-square value of 200.5 is more than the table value of 3.84 at a significance level of 0.05. The result of the analysis therefore, showed that there was a significant difference in compliance thereby rejecting this sub-hypothesis.

Examination of table 4.10 showed that the rate of compliance of those who perceived the benefit of treatment to be very beneficial is very high. 90.6 per cent of them were compliers. Contrary to this, those who perceived the benefit of treatment 'not beneficial' were poor compliers, only 19 per cent of them were compliers and majority of them 81 per cent were non-compliers to treatment while only 9.4 per cent of those who perceived treatment to be very beneficial did not comply to treatment.

From this table, it is clear that those who perceived the benefit of treatment to be very beneficial comply to treatment more than those who perceived it not beneficial.

SUB-HYPOTHESIS 6

There will be no significant difference in compliance to treatment between those perceived leprosy treatment to be somewhat beneficial and those who perceived it not beneficial.

TABLE 4.11

CHI-SQUARE VALUE AND PERCENTAGE DISTRIBUTION OF THOSE WHO PERCEIVED THE BENEFIT OF TREATMENT TO BE SOMEWHAT BENEFICIAL AND NOT BENEFICIAL

Compliance	BENEFIT OF TREATMENT				Total
	Somewhat Beneficial		Not Beneficial		
	No.	%	No.	%	
Comply	231	73.8	103	19.0	334
Non-comply	82	26.2	440	81.0	522
Total	313	100	543	100	856

$$\chi^2 = 252.90 \quad \text{df} = 1, \quad P < 0.05$$

Table 4.11 presents the findings for the respondents who perceived the benefit of leprosy treatment to be somewhat beneficial and those who perceived it to be not beneficial. The result of the chi-square analysis showed a significance difference in their compliance to treatment.

The calculated chi-square value of 252.90 was obtained. This is more than the table chi-square value of 3.84 at the 0.05 level of significance.

This result therefore rejects the sub-hypothesis which says that there was no significant difference in compliance to treatment between those who perceived treatment of leprosy somewhat beneficial and those who perceived it not beneficial.

Examination of table 4.11 clearly shows that those respondents who perceived the benefit of leprosy treatment to be somewhat beneficial were better compliers - 73.8 per cent of them complied to treatment; and only 26.2 per cent of them were non-compliers. For those who perceived leprosy treatment not beneficial, most of them 81 percent were non-compliers to treatment only 19 per cent of them complied to treatment.

From this table, it could be seen that there is a significant difference in the compliance to treatment between the two groups. Certainly leprosy patients who perceived the benefit of leprosy treatment to be somewhat beneficial complied to treatment more than those who perceived it not beneficial.

Analysis of Perceived Severity of Sickness and
Perceived Benefit of Treatment on Compliance

In testing these sub-hypothesis, the data collected for sections B and C of the structured interview was used.

SUB-HYPOTHESIS 7

There will be no significant difference in compliance between those who perceived their sickness to be very severe and those who perceived their treatment to be very beneficial.

TABLE 4.12

CHI-SQUARE VALUE AND PERCENTAGE DISTRIBUTION
OF THOSE WHO PERCEIVED THEIR SICKNESS VERY
SEVERE AND TREATMENT VERY BENEFICIAL

Compliance	SEVERITY		BENEFIT OF TREATMENT		Total
	Very Severe No.	%	Very Beneficial No.	%	
Comply	113	40.4	87	90.6	300
Non-comply	314	59.6	9	9.4	323
Total	527	100	96	100	623

$\chi^2 = 81.97, \quad df = 1, \quad P < 0.05$

Table 4.12 presents the findings of respondents who perceived their sickness to be very severe and those who perceived the benefit of leprosy treatment to be very beneficial.

The analysis result gave the calculated χ^2 value for this sub-hypothesis as 81.97 against the tabled chi-square value of 3.84 at the 0.05 level of significance.

Since the calculated chi-square is greater than the tabled chi-square, the result of this sub-hypothesis is therefore significant, and rejecting the null sub-hypothesis. In other words, the result showed that there is significant difference in compliance to treatment between those respondents who perceived their sickness to be very severe and those who perceived their treatment very beneficial. The respondents who perceived the benefit of leprosy treatment to be very beneficial were better compliers. 90.6 per cent of them comply to treatment while less than half the number, 40.4 per cent, of those who perceived their sickness very severe comply to treatment.

59.6 per cent of those who perceived their sickness to be very severe did not comply to treatment and only 9.4

per cent of those who perceived their treatment very beneficial did not comply to treatment.

This analysis showed that those who perceived leprosy treatment very beneficial complied to treatment more than those who perceived their sickness to be very severe.

SUB-HYPOTHESIS 8

There will be no significant difference in compliance between those who perceived their sickness to be moderately severe and those who perceived their treatment somewhat beneficial.

TABLE 4.13

CHI-SQUARE VALUE AND PERCENTAGE DISTRIBUTION OF THOSE WHO PERCEIVED THEIR SICKNESS MODERATELY SEVERE AND TREATMENT SOMEWHAT BENEFICIAL

Compliance	SEVERITY		BENEFIT OF TREATMENT		Total
	Moderately Severe No.	%	Somewhat Beneficial No.	%	
Comply	171	49.9	231	73.8	402
Non-comply	172	50.1	82	26.2	254
Total	343	100	313	100	656

$$\chi^2 = 45.60, \quad df = 1, \quad P < 0.05$$

Table 4.13 presents the findings for the respondents who perceived their sickness moderately severe and their leprosy treatment somewhat beneficial. The analysis showed a significant difference in their compliance to treatment.

The calculated chi-square value of 45.60 was more than the table chi-square value of 3.84 at the 0.05 level of significance.

This result therefore rejects this sub-hypothesis which states that there was no significant difference in compliance between those who perceived their sickness moderately severe and those who perceived their treatment somewhat beneficial.

Examination of table 4.13 clearly shows that those respondents who perceived of their treatment somewhat beneficial were better compliers 73.8 per cent of those complied. 26.2 per cent of them were non-compliers to treatment. About half of those, 49.9 per cent, who perceived their sickness moderately severe comply to treatment while the remaining half 50.1 per cent of them did not comply to treatment.

From this table, it can be inferred therefore, that leprosy patients who perceived their treatment somewhat bene-

ficial comply to treatment more than those who perceived the disease moderately severe.

SUB-HYPOTHESIS 9

There will be no significant difference in compliance between those who perceived their sickness not severe and those who perceived the treatment not beneficial.

TABLE 4.14

CHI-SQUARE VALUE AND PERCENTAGE DISTRIBUTION OF THOSE WHO PERCEIVED THEIR SICKNESS NOT SEVERE AND TREATMENT NOT BENEFICIAL

Compliance	SEVERITY		BENEFIT OF TREATMENT		Total
	Not Severe No.	%	Not Beneficial No.	%	
Comply	45	54.9	103	19.0	148
Non-comply	37	45.1	440	81.0	477
Total	82	100	543	100	625

$$\chi^2 = 50.84, \quad df = 1, \quad P < 0.05$$

Examination of table 4.14 indicates a significant difference in compliance to treatment between those who perceived their sickness not severe and those who perceived their treatment not beneficial.

The calculated chi-square value of 50.84 is more than the table chi-square value of 3.84 at a significant level of 0.05; thereby rejecting the the null-hypothesis.

The table showed that of the total number of respondents who perceived their sickness not to be severe, 54.9 per cent of them complied to treatment while 45.1 percent of them did not comply to treatment. Unlike those who perceived their sickness not severe, majority of those who perceived their treatment not to be beneficial, 81 percent, of them did not comply to treatment only 19 percent of them complied to treatment.

This result therefore, showed that there was significant difference in compliance to treatment between those who perceived their sickness not severe and those who perceived their leprosy treatment, not beneficial. Thus, rejecting this sub-hypothesis.

DISCUSSIONS

Antia and Palekar (1982), commenting on the manifold problems associated with leprosy control observed that every step towards the control of the disease is complicated by its social consequences. They advised that what is more

important in devising a programme for leprosy control is a better understanding and appreciation of the human aspect of the disease.

The findings of this research, focused on the human aspect of the disease. Specifically, it dealt with the patients' perceptions of the seriousness of the disease, and benefits of treatment as they influenced their compliance to treatment.

The discussions of the findings as presented here were under the headings:

- (a) Perceived severity of sickness
- (b) Perceived benefit of treatment

These headings were related to the compliance behaviour of the respondents.

Perceived Severity of Sickness:

The respondents were grouped into three categories of perceived severity, based on their score on the perceived severity section of the research instrument. The three categories were very severe, moderately severe and not severe. These categories were matched against one another

to highlight each group's compliance behaviour. A matched sampling of this kind is likely to reveal certain conclusions which one would expect to be applicable to any public leprosy clinic.

Based on the grouping of the respondents into categories, this study showed that of the total 952 respondents, more than half 527 or 55 percent of them perceived their sickness very severe, while 343 or 36 percent of them perceived it moderately severe and 82 or 9 per cent of them considered their sickness not severe. The perceptions of severity was based on the respondent's subjective judgement and not the medical views of severity. Similar studies that has used the subjective methods of estimating severity were those of Bonnar (1969), Pragoff (1962) and MacDonald and associates (1963).

This subjective method of assessing patient's or respondents perceptions is appropriate because of the recognition of the various views individuals might have on a particular problem. What one individual might consider serious might not be serious to another person; and moreover, it is each individuals perception that will influence his behaviour.

The grouping of the respondents in this study clearly showed, as reported by Balasubramania and others (1984), Vyas et. al. (1982) and Antia (1977), that because of the social ostracism, psychosocial constraints and perhaps public ignorance and misconceptions associated with leprosy, majority of the people consider the disease very severe.

In fact, in many societies, as observed by Ahmed (1984) the leprosy patient is outwardly rejected and sent out of the society. As observed in this study, the few respondents who perceived their sickness not severe or moderately severe were those who were either in the early stages of the disease or those who started taking medication early and have not been deformed by the disease. Ordinarily, one may not recognize them as having the disease.

As stated earlier, one of the purposes of this study was to investigate whether perceived severity of sickness has any significant influence on the leprosy patient's compliance to treatment.

The basic assumption as regards the variable of severity is that the more severe an illness is perceived, the better the compliance behaviour. Becker (1974) summarizes this

assumption by stating that patients' estimates of the seriousness of an illness are consistently predictive of compliance with the prescribed medical regimen.

On analysis of the results, it was found that there was a significance difference in compliance to treatment between leprosy patients who perceived their sickness to be very severe and those who perceived it moderately severe. Those who perceived their sickness to be moderately severe were better compliers 49.9 per cent, while 59.9 per cent of those who perceived their sickness to be very severe were non-compliers to treatment.

This result was contrary to other studies where Heinzelmann (1962) found that both in an absolute sense, and when compared with other diseases, the patients perceived seriousness of rheumatic fever was highly predictive of compliance with penicillin prophylaxis. Other studies such as those of Becker and associates (1972) and Francis and others (1967), also showed that the more severe a disease is perceived the higher the rate of compliance to treatment.

However, the results of this study for the first sub-hypothesis was in line with the findings of Berkowitz et. al. (1963), where they reported that patients with difficult illnesses or severe illness were less compliant. Similarly, Davis and Eichhorn (1963), found patients with newly diagnosed cardiac disease, which is considered very severe, to be less compliant than those with established disease. This, according to the researchers, was probably due to the fact that those patients, did not know how serious their problem was.

Elewude's study (1973), came up with a similar result to the one in this study. He found that the patients with pulmonary tuberculosis felt that their sickness was very severe yet they did not comply to treatment because they believed that their sickness was caused by some supernatural forces and not germs. However, Eke (1973), gave the reason for non-compliance as being that the girls with pulmonary tuberculosis felt that their chances of marriage would be reduced if people knew they had the disease.

In the case of this study, among the reasons why those who perceived their sickness of leprosy to be very severe and yet did not comply, as showed by their responses, were

that firstly, even though their illness was very severe, going for treatment will be a waste of time because the worst has happened to them, i.e. they have been deformed already. They believed that even if they go for treatment, their lost limbs and other deformities can never be restored. Another explanation is that since most of them have left their homes because of the stigma attached to their illness, they have to look for a means of living by begging in the streets which they believed pays them more than going to queue or spend a lot of their time in leprosy clinics looking for drugs. In other words, their trade of begging for alms was responsible for preventing them from complying to treatment.

Worst still, is the belief of most of them that, their illness was not, caused by a germ, but by God and it is only God who could cure them not any person or medicine; so they only pray and wait for God to cure them of their illness.

In this study, it was found that there was a significant difference in compliance to treatment between those who perceived their sickness to be very severe and those who perceived it not severe, a chi-square value of 5.50

with 1 degree of freedom at 0.05 level of significance was obtained. The result showed that those who perceived their sickness not severe were better compliers 54.9 per cent as against 40.4 per cent for those who perceived their sickness very severe. The explanation for this result is that those who perceived their illness not severe were mostly those who had no deformities while some were living in leprosy clinics.

For those who had no deformities, they believed that if they comply to treatment, they could avoid being deformed hence they complied to treatment, while others who were living permanently in the leprosarium had very easy access to the treatment so they had no reason not to walk to the clinic and received their treatment. Another motivating factor for those who had no deformities was that since not many people in the society knew that they had the disease, they just quietly went for treatment with the hope that they could be cured thereby saving them the agony of being ostracised in the society. As De Sincay (1956) commented, most studies indicate that leprosy carries stigma, lowering of economic and social standards, and rejection by relatives and friends.

The findings of those who perceived their sickness moderately severe and not severe showed an insignificant result ($\chi^2 = 0.48$, $df = 1$, $P > 0.05$). These findings may be partly explained in the light of the explanation given by Becker (1974), that in the case of leprosy patients, a diagnosis of illness has been made, and the patient is experiencing symptoms. So, the presence of physical symptoms probably exerts an elevating effect on perceived severity, motivating the patient to comply, at least during the early stages of treatment. However, in the later stage of treatment, as in the case of leprosy where treatment is for a long period, as reported by Arnold et. al. (1970), Latiolais and Berry (1969) and Reibel (1969), patients may not be compliant with the prescribed regimen either because they felt better or were bored with the medication. This explanation adequately fits those respondents who perceived their sickness moderately severe. Majority of them felt they were getting better hence they relaxed in going for regular treatment; while some, who fear that government may put them into leprosy rehabilitation camps, thereby preventing them from street begging said their sickness was moderately severe. These patients don't go for treatment in leprosy clinics.

The pattern that emerges from this study with the variable of perceived severity, agreed with the report of Stimson (1974) that in most studies, the majority of the results (22 out of 25 findings) indicated that the percentage defaulting is 30 percent or more. As shown in this study, the percentage for non-compliance of those who perceived their sickness very severe was 59.6 per cent, moderately severe 50.1 per cent and not severe 45.1 per cent. This showed that for all the three categories of severity, the non-compliance rate was high.

Perceived Benefit of Treatment

Like the variable of perceived severity of sickness, the respondents were also grouped into three categories of perceived benefit of treatment based on their score on the perceived benefit of treatment section of the research instrument. The three categories were those who perceived the benefit of leprosy treatment very beneficial, somewhat beneficial and not beneficial. These categories were also matched against one another to highlight their compliant behaviour.

This result showed that more than half the number of the total respondents perceived leprosy treatment not beneficial 543 of them or 57 per cent. While 313 or 33 percent perceived treatment somewhat beneficial and 96 or 10 percent of the respondents perceived treatment very beneficial.

The general belief is that most people will comply to treatment if they have faith or belief that the treatment will be of benefit to them. Many studies conducted on preventive health behaviour have shown very high association between perceived benefit and compliance to treatment (Tash et. al. 1969, Haefner and associates 1967 and Antonovsky and Kats 1970).

In this study, it was found that there was a significant difference between those who perceived their treatment very beneficial and those who perceived it somewhat beneficial. The chi-square value of 11.06 at 0.05 level of significance was found. Most of those who perceived treatment very beneficial (90.6 percent) complied while 73.8 percent of those who perceived it somewhat beneficial complied. This result is in agreement with the studies of

calnan and Moss (1984), Elling (1960) and Heinzelmann (1962) where very high positive association was found between the belief in the efficacy of drugs and compliance to medical regimen.

The differences found in the compliance behaviour were partly due to the fact that some of the respondents complained of inadequate supply of drugs at the clinics. On the whole, the compliance rates for those who perceived their treatment very beneficial and somewhat beneficial were relatively high, thereby supporting the assumption that the higher the perception of efficacy of treatment, the higher the compliance rates.

As shown in this study, there was a significant difference in compliance between:

- (1) Those who perceived treatment very beneficial and those who perceived it not beneficial and
- (2) between those who perceived it somewhat beneficial and not beneficial.

For those who perceived treatment not beneficial 81 percent of them were non-compliers. This study also showed that

out of the total 952 respondents for the study, more than half the number 543 or 57 percent of them perceived treatment not beneficial.

Their responses showed that for most of them, they have faith in other sources of treatment more than the modern treatment, and of course only 2 percent of the total respondents believed that their disease was due to a germ. So, if they believed that the cause of their sickness was some supernatural powers, then they will have faith in some sort of mysterious healing which will prevent them from going to clinics. In fact, the concept of causative agent determines where one goes to seek treatment and the belief he will have on the benefit of treatment.

This study agreed with the findings of Gilkes (1970) and Clements (1970) in their study of primitive concepts of diseases in which they identified causes of disease given by the people as sorcery, breach of taboo, spirit intrusion and the spirit of the dead. Since the respondents of this study also held similar beliefs on these causes of disease, it was not therefore, surprising that most of them did not comply to treatment. Makindé (1984), observed that the efficiency of traditional medicine is

not disputed in Africans, and that about 85 percent of Africans go for traditional medicine. So, it could be inferred from the result of this study that the traditional medicine exerts a lot of influence on the compliant behaviour of the respondents. The higher the perception of benefit of treatment is, the higher the compliance rate.

Perceived Severity of Sickness with Perceived Benefit of Treatment

Among the purposes of this study was to investigate whether it was the perceived severity of sickness or perceived benefit of treatment that affects compliance to treatment more significantly. The results of this study showed that when the three categories of perceived severity was compared to the three categories of perceived benefit of treatment, for all the three matchings, there were significance difference in the compliance behaviour of the respondents.

In the case of those who perceived their sickness very severe, their compliance rate was 40.4 percent as against the 90.6 percent rate for those whose perceived treatment very beneficial. This result showed that the association

between compliance and benefit of treatment is greater than that of severity of sickness and compliance.

Similarly, the comparison between those who perceived sickness moderately severe and those who perceived treatment somewhat beneficial showed that those who perceived treatment somewhat beneficial were better compliers than those who perceived their sickness moderately severe. Finally, the comparison between those who perceived sickness not severe and treatment not beneficial showed that those who perceived sickness not severe were better compliers - 54.9 percent as against 19 percent for those who perceived treatment not beneficial.

The findings of this study was generally in line with most compliance studies as shown in the studies of Davis and Yin Yern (1981), Tare (1975), Becker and associates (1972) and Bergman and Werner (1963).

Even though a lot of studies indicated that compliance rates were very low, like the studies of Arnhold and associates (1970), Francis and others (1969) and Glanze and others (1984), this study showed high compliance rates for those who perceived their treatment very beneficial (90.6 percent), and somewhat beneficial (73.8 percent).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

SUMMARY

This study was designed to investigate whether perceived severity of sickness and perceived benefit of treatment of leprosy patients in Sokoto State, have any significant influence on their compliance to treatment.

The samples for this study were drawn from three out of the five administrative divisions in Sokoto State. The three divisions chosen were Argungu, Sokoto and Zuru. The main research tool was the interview and the sampling method used to gather data was the area or clustered sampling method.

Chi-square and percentages were the main statistical tool used for analysing the findings of this study.

The findings were classified into two perceived sections as contained in the research hypothesis which were based on nine sub-sections. The two sections were the perceived severity of sickness and perceived benefit of treatment. The sub-sections were:

- (a) very severe and moderately severe responses;
- (b) very severe and not severe responses;
- (c) moderately severe and not severely;
- (d) very beneficial and somewhat beneficial sections;
- (e) very beneficial and not beneficial;
- (f) somewhat beneficial and not beneficial;
- (g) very severe and very beneficial sections;
- (h) moderately severe and somewhat beneficial and
- (i) not severe and not beneficial.

The findings were however discussed under the two areas of the health belief model investigated, namely: perceived severity of sickness and perceived benefit of treatment as they related to the health behaviour (compliance to treatment) of the respondents.

In brief, out of the nine sub-hypothesis outlined for the study eight of them were rejected and only one was upheld. The only one upheld was : sub-hypothesis three, for those who perceived their sickness moderately severe ~~and not severe~~, the chi-square value of 0.48 at 0.05 level

of significance was obtained as against the table value of 3.84. In essence, the main hypothesis which held that perceived severity of sickness and perceived benefit of treatment of leprosy patients in Sokoto State would not have any significant influence on their compliance to treatment was wrong and thus rejected. Only one out of nine of the sub-hypothesis was upheld.

The implication of the acceptance of the major hypothesis is that perceived severity of sickness and perceived benefit of treatment of leprosy patients in Sokoto State play a very significant role in influencing their compliance behaviour or health behaviour. This deduction was further confirmed when the response obtained in respect of the three categories of perceived severity and the three categories of perceived benefit of treatment were separately considered. In fact, the result of this study showed that out of the six different perceptions categories, only 2 or 33.3% of them could be considered as having high compliance rate i.e. 90.6% and 73.8% for those who perceived treatment very beneficial and moderately beneficial respectively (see Tables 4.7, 4.8, 4.9, 4.10) remaining four categories the non-compliance rate ranges from 45.1 percent to as high as 81 percent.

The result obtained actually showed that for the perceived severity of sickness, the higher the level of severity, the lower the compliance rate, whereas, in the case of perceived benefit of treatment, the higher the perception the higher the compliance rate. In fact, looking at the interactive effects of perceived severity of sickness and perceived benefit of treatment; the result showed that those who perceived treatment very beneficial complied to treatment more than those who perceived the disease very severe. Similarly, those who perceived treatment somewhat beneficial were better compliers than those who perceived the disease moderately severe. However, those who perceived the disease not severe were better complier than those who perceived treatment not beneficial.

CONCLUSION

The findings in this study showed that eight out of the nine sub-hypothesis showed consistent trend, rejecting the null sub-hypothesis stated in chapter one.

This implies that the different level of severity of the sickness and perceived benefit of treatment of each respondent had influence their compliance to treatment.

The findings in this study thus, led to the following conclusions: Firstly, that even though majority of the respondents perceived their sickness to be very severe, nevertheless, their compliance rate was very low. Those who perceived their sickness not severe were the fewest, but they were better compliers than those who perceived their sickness very severe and moderately severe.

The trend showed here was that in the case of leprosy patients, although they mostly perceived leprosy a very severe disease, they did not comply to treatment. The result is that the disease will keep on spreading, those who had the disease will become deformed thereby increasing the number of beggars on the streets.

The number of leprosy patients who perceived their treatment very beneficial was low but their compliance rate was really very high. Similarly, respondents who perceived treatment somewhat beneficial were high compliers to treatment and they formed about one-third of the total respondents.

More than half of the respondent perceived treatment not beneficial which meant that they did not have faith in

the drugs given and other helps rendered, hence the non-compliance rate of this group of respondents was very high. The result showed that those who perceived leprosy to be very severe, moderately severe, not severe and treatment not beneficial were all low compliers to treatment; while those who perceived treatment very beneficial and somewhat beneficial were high compliers to treatment.

The findings of this study therefore, support the findings of Gabrielson (1967), Elling (1960) and Heinzelmann (1962), that perceptions of benefits of treatment is related to patients compliance to treatment, that respondents with greater perceived benefits of treatment will have greater compliance rates. On the perceived severity or seriousness of sickness, the findings of this study contradict or do not agree with the findings of Tash et. al. (1969), Shuval (1970) and Kegeles (1963), who found positive relationship between perceived seriousness and compliance to treatment. However, the findings of Berkowitz et. al. (1963), David and Eichhorn (1963), and Elewude (1973) agrees with the findings of this study that the higher the per-

ceived seriousness or severity of the sickness the lower the compliance rate. Thus, it could be concluded from the findings of this study, that the perception of benefits of treatment by the leprosy patients positively influence their compliant behaviour better than their perception of severity of sickness.

RECOMMENDATIONS

Studies of patients "compliance" with treatment or doctors' instructions have generally used an ideal image of the patient as a passive, obedient and unquestioning recipient of medical instructions. Divergence from this ideal - "defaulting" or "non-compliance" - is seen as irrational in the light of medical rationality. The blame for default is seen as lying with the patient. However, in the case of leprosy patients, the social stigma attached to the disease is so great that the society greatly influences the patients compliance behaviour. The leprosy patient, at least in the early stage, hide his sickness for fear of being ostracised from the society.

In view of this, this study is strongly recommending a wide and effective public enlightenment especially in the rural areas on the various aspects of leprosy. This type of public enlightenment will enable the general public know that leprosy is a disease like any other disease, which is not caused as a result of punishment for some evil deeds, and that it is not as contagious as people think but rather, it is curable. This will help to reduce the amount of social stigma attached to the disease and enhance patients compliance.

One implication from the findings of this study is that the more the patients perceived their sickness to be very severe, the less they comply to treatment. The result would be poor compliance rate, and treatment failure. Based on this implication, both the government, and health workers should endeavour to make patients believe that leprosy is not a very severe or serious disease. In fact, as Browne (1983) puts it, leprosy doesn't kill, it only cripples the victim if treatment is delayed. If the patients are convinced that leprosy is not a very severe disease, that kills and that it could be cured, they will readily comply to treatment.

To alleviate the anxiety of the leprosy patient and to give him confidence in himself, it is essential to teach him the correct religious and scientific information about leprosy. This entails the involvement of the religious leaders as well as adequately trained health and social workers. A multidisciplinary approach would make education more acceptable to the communities and of more benefit to the control activities, especially treatment. This is more important because as shown in this study, many of the respondents believed that their sickness was caused by God.

Government should practice or start the "integrated system" in the management of leprosy in-patients. This however, should be at the stage when the disease has been bunt out, that is when it no longer infectious. This means the admission of leprosy patients together with non-leprosy ones, without any differences in the type of medical care and services rendered, and involving multi-departmental assistance if needed. The aim of this suggestion is to support the idea that leprosy patients are no longer to be segregated and should be treated together with other non-leprosy patients. In this case, continuous courses and information about leprosy to the personnels involved would be very beneficial.

The fact that out of the 952 respondents in this study only 16 or 2 percent of them believed their illness was caused by a bacteria infection, makes the understanding of the patients explanatory model very vital to treatment

compliance, and enhance better understanding and co-operation between the patients and medical practitioners.

Medical anthropological studies have shown that conflicts between patient and practitioner explanatory models can lead to problems such as poor compliance and dissatisfaction with treatment. In view of this, this study strongly recommends that medical practitioners should endeavour to understand, as much as possible, the patients explanatory models. Among the models were the herbalists, practitioners of traditional medicines and spirit doctors. Knowing these patient's explanatory models, will enable the medical practitioner devise a means through which he could make patients comply or accept the western type of medical treatment.

Another recommendation given by this study is that since many respondents have no faith in the efficacy of

treatment; both government and private organisations undertaking the various measures of health control, should liaise with the mass media, most especially the electronic media i.e. Radio and Television to develop programmes aimed at educating the public on the efficiency of leprosy treatment. Programmes should be devised where those leprosy patients who have had treatment and have been declared cured could appear on the television to personally tell the public about their experiences and the benefits they derived from treatment. These types of programmes when adequately handled, will enhance compliance to treatment and reduce social stigma attached to the disease. Efforts should be made towards the training of leprosy medical personnel. The nursing and medical schools should intensify their teaching on specific aspects of leprosy treatment, control social aspects and rehabilitation. This is very essential to change the attitude of some of the medical personnel who have apathy towards the disease. Some of these medical personnel still seem to believe in the

traditional concepts of leprosy - that is, it is an ostracized disease!

Since leprosy is a curable disease and deformities could be prevented, government should lay less emphasis on the segregation or putting the patients in camps. The idea that the patients are going to be forced into camps make the patients avoid going for treatment or even admit at the early stages that they have the disease. Efforts should be geared towards adequate rehabilitation of patients.

Different trades/professions should be taught to them. Also, since treatment is usually over a long period, patients should be allowed to be taking treatment as outpatients. Those with lepromataus or contagious type of leprosy should be admitted into the hospitals until their condition has improved.

RECOMMENDATIONS FOR FURTHER RESEARCH

The following research titles are recommended for further studies:

- (1) Influence of Demographic Variables on Compliance of Leprosy Patients to Treatment in Nigeria.

- (2) Causative Factors for Treatment Dropouts in a Leprosy Clinic.
- (3) Social Aspects of Leprosy Control with Special Reference to Rehabilitation in Nigeria.

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EDUCATION'S LETTER SOLICITING THE ASSISTANCE OF
ALL THOSE CONNECTED WITH THE STUDY.

Department of Physical and Health Education
University of Ibadan

Ref:

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Date:

TO WHOM IT MAY CONCERN

APPENDIX A

Mr. Akin Adesina - Ph.D Student
(Matric. No. 43875)

The bearer(s) is/are a student(s) in this Department.

They/He/She is/are carrying out research work in
connected with

ACTING HEAD OF DEPARTMENT OF PHYSICAL AND HEALTH
EDUCATION'S LETTER SOLICITING THE ASSISTANCE OF
ALL THOSE CONNECTED WITH THE STUDY.

will please give them the necessary assistance that
they/he/she may require.

Thank you.

(Signed)

Dr. C.O. Uduh,
Reader & Ag. Head,

Department of Physical & Health Education.

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Department of Physical and Health Education
University of Ibadan

Ref:.....

Date:

TO WHOM IT MAY CONCERN

Mr. Amos Adamu - Ph.D Student
(Matric. No. 43898)

The bearer(s) is/are a student(s) in this Department.
They/He/She is/are carrying out some research work in
connection with their/his/her studies.

I shall therefore, be exceedingly grateful if you
will please, give them/him/her all necessary assistance that
they/he/she may require.

Thank you.

(Signed)
Dr. C.O. Udoh,
Reader & Ag. Head,
Department of Physical & Health Education.

APPENDIX B

MINUTES OF THE RESPONSES GIVEN BY THE CHIEF MEDICAL OFFICER MINISTRY OF HEALTH, SOKOTO STATE, AND THE ACTING PRINCIPAL MEDICAL OFFICER (AMANAWA LEPROSARIUM) SOKOTO TO THE ACTING H.O.D's LETTER OF APPENDIX 'A'.

Department of Physical and Health Education
University of Ibadan

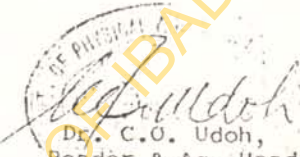
Ref: PH/15.03Date: 27th Feb., 1986TO WHOM IT MAY CONCERNMr. Amos Adamu - Ph.D Student(Matric. No. 43898)

The bearer(s) is/are a student(s) in this Department.

They/He/She is/are carrying out some research work in connection with their/his/her studies.

I shall therefore, be exceedingly grateful if you will please, give them/him/her all necessary assistance that they/he/she may require.

Thank you.


 Dr. C.O. Udoh,
 Reader & Ag. Head,
 Department of Physical & Health Education.

A.

Ag PMO Ammanawa Lagosararima.

Extend all courtesy to the above named student.

B.

Above noted & necessary assistance were given to the student.

off rec.
30/10/86



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APPENDIX C

INTERVIEW QUESTIONS

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5. Marital Status

- i) Single
- ii) Married
- iii) Divorced
- iv) Widow

Specify

6. Educational Level

- i) No formal education
- ii) Primary School education
- iii) Secondary School education
- iv) Post-Secondary education

7. Which of these describe the family from which you come?

- i) Head of household had formal education
- ii) Head of household did not attend any formal school
- iii) Brothers, sisters and other close relatives received formal education
- iv) Nobody is educated in my family

8. What is the occupation of Head of your household?

- i) Farmer
- ii) Trader
- iii) Teacher
- iv) Civil Servant
- v) Islamic Mallam
- vi) Others

d) Specify

9. Which of these describe the yearly income of the head of your household?
- i) Below ₦1,000.00
 - ii) ₦1,000.00 - ₦3,000.00
 - iii) Above ₦3,000.00
10. How long ago did you discover that you have leprosy?
- i) Less than 1 year
 - ii) 1 - 3 years
 - iii) 4 - 6 years
 - iv) 7 - 9 years
 - v) More than 9 years
11. How did you get to know that you have leprosy?
- i) Through friends
 - ii) Through parents or relatives
 - iii) Through medical examination
 - iv) Self discovery
 - v) Others
- a) Specify
12. What do you think is/are the causes of Leprosy?
- i) Eating goat meat
 - ii) Evil spirit (witch)
 - iii) Hereditary
 - iv) Bacterial (Germ)
 - v) Punishment from God
 - vi) Bathing with hot water after delivery
 - vii) Others
- (a) Specify

SECTION BSEVERITY

	S.A.	A.	N.S.	D.A.	S.D.
S.A. - Strongly Agreed					
A. - Agreed					
N.S. - Not Sure					
D.A. - Disagreed					
S.D. - Strongly Disagreed					
1. Leprosy is a very serious disease.					
2. Leprosy patients are not respected in the society.					
3. Leprosy makes one to loose prestige in the society.					
4. Leprosy prevents one from doing his normal work.					
5. A Leprosy patient can't be gainfully employed.					
6. Leprosy isolates one from the society.					
7. A Leprosy patient cannot marry in the community.					
8. Leprosy is a source of worry for the patient throughout life time.					
9. There are other diseases that are more serious than leprosy.					
10. A Leprosy patient can not achieve anything in life.					
11. Deformities caused by leprosy is not the worst thing that can happen to someone.					

SECTION DCOMPLIANCE

1. Do you treat your disease?
- i) Yes
 - ii) No
2. Where do you normally go for treatment?
- i) Leprosy Clinic
 - ii) General Hospital
 - iii) Private Clinic
 - iv) Traditional medicine man
 - v) Spiritual treatment
 - a) Islamic
 - b) Christian
 - vi) Others
 - a) Specify
3. How often do you go there for treatment?
- i) Weekly
 - ii) Monthly
 - iii) Every 3 months
 - iv) Every 6 months
 - v) Yearly
 - vi) Can't remember
 - vii) Rarely

4. When last were you in the clinic

- i) This week
- ii) Last week
- iii) Last month
- iv) Last 3 months
- v) Last 6 months
- vi) Last year
- vii) More than 1 year
- viii) Can't remember

5. When next is your appointment in the clinic?

- i) This week
- ii) Next week
- iii) Next month
- iv) In 3 months time
- v) In 6 months time
- vi) Next year
- vii) Can't remember
- viii) None

6. Do you plan to go?

- i) Yes
- ii) No
- iii) Don't know

7. If No or Don't know why?

- i) Financial reasons
- ii) Transport
- iii) Distance
- iv) No improvement in sickness
- v) Boring

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APPENDIX D

INTERVIEW QUESTIONS: THE HAUSA VERSION

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TAKARDAR NEMAN BAYANI

Alfanuh shan maganin kuturta da kuma illolin kuturta idan ta tsananta dangane da yadda kutaren jihar Sakkwato suka dauki shan magani.

Zana wannan alama 'X' cikin akwatin da ta fi dacewa da amsarka. Duk irin amsar da ka/kika ba da, da ita za mu yi aiki, kuma mu dauke ta tankar asiri.

KASHI NA FARKO A

- | | | |
|---------------------|---------------------------|--------|
| 1. Jinsi | Mace | Namiji |
| 2. Shekarun haifuwa | | |
| | (1) Kasa ga ashirin | |
| | (2) Daga 21-30 | |
| | (3) Daga 31-40 | |
| | (4) Daga 41-50 | |
| | (5) Sama da hamsin | |
| 3. Addini | | |
| | (1) Musulunci | |
| | (2) Kirista | |
| | (3) Addinin gargajiya | |
| | (4) Wani addinin na dabam | |

4. Kabila (1) Hausa
(2) Fulani
(3) Dakarkari
5. Akwai aure? (1) Akwai (2) Babu
6. Mizanin ilmin boko
(1) Ban sami ilmin makaranta ba
(2) Na sami ilmin elementare
(3) Na sami ilmin sakandare
(4) Na sami ilmin gaba da sakandare
7. Daga cikin bayanan da ke kasa wanne ne ya fi dacewa wajen bayyana ilmin iyalinka/ki?
(1) Mai gidanmu ya sami yin ilmin zamani
(2) Mai gidanmu bai sami yin ilmin zamani ba
(3) Kannai da yannai sun sami yin ilmin zamani
(4) Ba wanda ya sami yin ilmin zamani cikin iyalinmu
8. Mene ne sanaar mai gidanku?
(1) Noma
(2) Kasuwanci
(3) Aikin gwamnati
(4) Sandarsa ba ta cikin ukun nan
9. Kimanin kudin shiga ga maigidanmu, ga shekare
(1) bai kai ₦1,000.00 ba
(2) tsakanin ₦1,000.00 ne zuwa ₦3,000.00
(3) ya haura sama da ₦3,000.00

10. Tun yausha ka/kika lura da cewa ka/kin kamu da ciwon kuturta?
- (1) Ba a shekara ba
 - (2) Kamar shekare 1, 2 zuwa 3
 - (3) Tsakani shekare hudu-shidda
 - (4) Tsakani shekara 7 - 9
 - (5) Yau an ti shekare 9
11. Ta yaya ka/kika gano ka/kin kamu da ciwon kuturta?
- (1) Ta wajen abokai
 - (2) Ta wajen iyaye da dangi
 - (3) A asibiti
 - (4) Ni na gane hakan da kaina
 - (5) Ga jama'a ne na ji
12. Me ka/ki ke zaton ke kawo kuturta?
- (1) Cin neman akuya
 - (2) Iskoki
 - (3) Gadon ake yi
 - (4) Kwayoyin cuta
 - (5) Horon Ubangiji ne ga mai laifi
 - (6) Wani dalili na dabam

SASHE NA BIYU 'B'

	Gaskiya na ainun	Gaskiya na	Ashe. Ban tabbata ba	Ban yarda ba	Ko da alama ban yarda ba
1. Kuturta mummunar cuta ce ainun					
2. Masu cutar kuturta ba a mutumta su a bainer jama'a.					
3. Cutar kuturta takan sa mutum ya rasa girma mawar da jama'a kan yi masa.					
4. Cutar kuturta takai tauye mutum daga yin ayyukansa na yau da bullum.					
5. Mai cutar kuturta ba yakan samu aibin yi ba.					
6. Kuturta takan yi wa mutum katanga da sauren jama'a.					
7. Mai cutar kuturta ba yakan sami matar aure ba.					
8. Cutar kuturta abin bakin cibi da bacin rai ne har iyakar tsawon rayuwar mutum.					
9. Akwai cututukan da suka fi na kuturta muni.					
10. Mai cutar kuturta ba zai iya takara komai ba a rayuwarsa.					
11. Illolin cutar kuturta, ba so ne suka fi na kewace irin cuta muni ba.					

SASHE NA UKU 'C'

	Gaskiya na ainun	Gaskiya ne	Ashen Ban tabbata ba	Ban yarda ba	Ko da alamo ban yarda ba
1. Kuturta na maqantuwa					
2. Maganin asibiti na wakar da kuturta					
3. Maganin asibiti na iya tsayar da habakar nakasar jiki ta kuturta					
4. Ya kamata shan maganin asibiti ya zamo ba sabawa					
5. In ana shan maganin duk sai yayin da aka ga dama, ba a dace da warkewa					
6. Tsawaita shan magani guda, yakan ginshi rayuwa da tunanin mutum (mai shan maganin)					
7. Ba wani maganin kuturta da ya fi maganin gargajiya					
8. Shan magani yana farfado ingancin mai kudurta a cikin alumma.					
9. Shan maganin kuturta da wuri ya fi alfanu bisa ga shan sa bayan wuri ya kure.					
10. Fashin shan magani a kar-akai na sa rashin warbew daga cutar.					

SASHE NA HUDU 'D'

1. Ki/Ka kan sha magani damin ciwon ki/ka?
 - (1) I
 - (2) A'a

2. Galibi ina ka/ki ke zuwa karbar magani?
 - (1) Asibitin kutare
 - (2) Babbar asibiti
 - (3) Asibitin kudi
 - (4) Ga (boka) mai gagani gargajiya

3. Daga yaushe zuwa yaushe ka/ki kan tafi can don karbar magani?
 - (1) Mako-mako
 - (2) Shekara - shekara
 - (3) Wata uku-uku
 - (4) Wata shida-shida
 - (5) Shekara-shekara
 - (6) Duk lokacin da aka bukatan
 - (7) Ban taba zuwa ba
 - (8) Can ba a rasa ba

4. Yanshe marabinki/ka da zuwa asibitin kutare?
 - (1) Wannan makon
 - (2) Makon jiya
 - (3) Watan jiya
 - (4) Wata shida baya
 - (5) Bara
 - (6) An fi shekara
 - (7) Ban iya tunawa

5. Yaushe aka ce ka/ki koma asibiti?

- (1) Mako mai zuwa
- (2) Watan gobe
- (3) Wata shida nan gaba
- (4) Badi
- (5) Ban iya tunawa
- (6) Ko daya

6. Ka/ki na da niyyar zuwa asibitin

- (1) I
- (2) A'a

7. In ba ka/ki da niyyar, me ya sa?

- (1) Matsalar kudi
- (2) Abin hawa zuwa asibiti
- (3) Nisa
- (4) Maganin bai karbe ni ba