Chapter-I

Introduction

“Drugs don't work in patients who don't take them.”¹,²

C. Everett Koop

Background and Need of the study

Chronic diseases are the leading cause of deaths world-wide and their impact is steadily growing. Approximately 17 million people die prematurely each year as a result of the global epidemic of chronic diseases. Low and middle income countries share 80% of deaths caused due to chronic diseases while only 20% are present in high income countries. In South-East Asian region 51% of all deaths are due to chronic diseases and 89 million are likely to occur in India alone.³

Taking a Global action against the chronic diseases, WHO has given the health community a new global goal in the year 2005: to reduce death rates from all chronic diseases by two percent per year over and above existing trends during the next 10 years. This goal would result in the prevention of 36 million chronic diseases by 2015. These diseases, especially heart diseases, diabetes mellitus, cancer, asthma, etc, will emerge as ‘invisible’ epidemics.³

In a study conducted in Northern India⁴, it was found that there was a rising trend in the prevalence of hypertension over the last 3 decades. The people of seven villages in the age group of 17-70 years were interviewed. The prevalence of hypertension was 4.5% and was higher among females than males and only 26.3% of all hypertensives were aware of their disease. Out of people aware of disease only 3.5% had regular treatment.
In an ICMR study in the year 1994 involving 5537 individuals (3050 urban residents and 2487 rural residents) demonstrated 25% and 29% prevalence of hypertension (Criteria: $\geq 140/90$ mm of Hg) among males and females respectively in urban Delhi, and 13% and 10% in rural Haryana. From south India, Kutty VR carried out hypertension prevalence study (criteria: $\geq 160/95$ mm of Hg) in rural Kerala during 1991 in the 20 plus age group and the prevalence was found to be 18%. Later studies in Kerala (Criteria: JNC VI) reported 37% prevalence of hypertension among 30-64 age group in 1998 and 55% among 40-60 age group during 2000. A higher prevalence of 69% and 55% was recorded among elderly populations aged sixty and above in the urban and rural areas respectively during 2000. The Sentinel Surveillance Project, documented 28% overall prevalence of hypertension (criteria: $=\text{JNC VI}$) from 10 regions of the country in the age group 20-69.

A study by Pradeepa and Mohan has reported that WHO estimates 135 million diabetic cases in 1995 and this number would increase to 300 million by the year 2025. It also states that India will lead the world with the largest number of diabetics in any given country.

In a multi centric study involving six urban cities in India (Chennai, Bangalore, Hyderabad, Mumbai, Culcutta and New Delhi), involving the age group of 20 and above showed a prevalence of 14% among men and women (sample size: 5288 men; 5928 women). The Sentinel Surveillance Project, documented 10% overall prevalence of diabetes from 10 regions of the country (using the criteria $\text{FPG} \geq 126 \text{mg/dl}$ or on treatment) in the age group 20-69. (Studies related to prevalence are given under review of literature)

Hence India with an increased prevalence of the diseases has to work vigorously towards the WHO goal. One aspect of it would be to look into the treatment compliance of the people which may help in bringing down the disease burden.
Medication compliance is defined as the extent to which a patient takes the medication as prescribed. There are multiple studies in the literature that report non compliance rates of 30% to 50% or higher based on the class of agents and population studies, when medication was to be taken over a long period, compliance rates dropped dramatically to approximately 50% for either prevention or cure.\(^7\) The compliance to drug treatment leads to the prevention of deaths from the disease. In India studies of this nature are very few and hence the problem has to be explored.

Burnier M\(^6\) on an article on Compliance in Hypertension states that non compliance is a universal characteristic and can affect all patients. The major problem is that it is not recognized in clinical practice. Good communication with the patient is essential to prevent non compliance. Long acting drugs can also be recommended.

Miller et al\(^9\) in the study the multilevel compliance challenge state that compliance is a complex behavioural pattern strongly influenced by the environments in which the patients live, healthcare providers practice and health care systems delivery care. The health care providers including pharmacists, nurses, psychologists etc who are involved in primary and secondary prevention play a role in enhancing compliance by interpreting recommendations, educating and motivating patients, monitoring responses to recommended behaviours and providing feedback. Maximum use of these services should be made patients to overcome non compliance to drugs. Multi level approach of education and behaviour change is important like consumer health education, provider education, etc.

Nurses play a very important role in the adherence to treatment by patients. In the paper Nursing Care Management and Responsibility it is stated that : Improving patient compliance with treatment orders through health education and extending care to all patients\(^10\), education will help patients to improve drug compliance.
Hence this study tries to find out the factors influencing drug compliance of hypertension, diabetes mellitus in selected areas and to plan and evaluate an awareness programme.

**Statement of the Problem**

A study of the lack of drug compliance among population with chronic diseases in selected areas of Udupi district

**Purpose of the study**

The study aims at exploring the factors that influence the decision of the person suffering from chronic diseases, to comply with the regular drug regimen prescribed for them. The study may further be able to recommend means to organize an awareness programme on the identified issues. Thus ultimately contributing to one of the goal set by WHO i.e. to reduce death rates in chronic diseases.

**Objectives**

The objectives of the study are to:

1. Assess the level of drug compliance and identify the factors influencing it in the selected population
2. Compare and correlate the level of drug compliance and factors influencing it among the various populations
3. Associate the level of drug compliance with selected demographic variables (age, sex, education, occupation, socio economic status, place of residence, nature of treatment)
4. Plan and evaluate the effect of an awareness programme on drug compliance.
Hypotheses

All hypotheses will be tested at 0.05 level of significance

H1: There will be a significant relationship between the level of drug compliance and the factors influencing it.
H2: There will be a significant difference in the level of drug compliance and the factors influencing it among various populations
H3: There will be a significant association between level of drug compliance and selected demographic variables.
H4: There will be a significant difference in drug compliance practices among the people after the awareness programme.

Assumptions

1. Health problems varies from person to person
2. Prevalence of disease varies from area to area
3. One of the responsibilities of nursing profession is to enhance drug compliances so as to reduce complications of common chronic diseases.

Operational Definition of terms

1. Factors influencing- It refers to some of the causes based on which the person decides to take medication, in this study factors like health status, complexity of medication, patient knowledge, social support, patient provider interaction will be studied.

2. Drug compliance- Compliance or adherence to a medication regimen is generally defined as the extent to which patients take medications as prescribed by their health care providers. In this study it will be measured with Morisky scale.11
3. Population-The people, 30-60 years of age belonging to the areas of study with diseases and undergoing treatment.

4. Chronic diseases- According to WHO\textsuperscript{12} Chronic diseases are diseases of long duration and generally slow progression This study includes hypertension and diabetes mellitus.

5. Selected Areas-It refers to areas where the study will be conducted. In this study it includes urban and rural areas of Karnataka. Urban areas indicate those areas coming under urban administration of the state and rural areas those coming under the rural administration.

**Conceptual Framework**

The study is based on the Rosentoch’s, Becker and Maiman’s Health Belief model. This model was developed to provide a framework for understanding why some people take specific actions to avoid illness, whereas others fail to protect themselves. The model was designed to predict which people would and would not use preventive measures and suggest interventions that might reduce client’s reluctance to assess health care. There are three major components of the health belief model: individual perceptions, modifying factors and likelihood of action. In addition uses of cues to action such as mass media campaigns, advice from others, illness of family members or friends and newspaper and magazine article may help to motivate clients to take action.\textsuperscript{13}

The health belief model is beneficial in assessing health protection or disease prevention behaviours. It is also useful in organizing information about clients’ views of their state of health and what factors may influence them to change their behavior. The model, when used appropriately provides organized assessment data about client’s abilities and motivation to change their health status. Health education programs can be developed to fit the clients.\textsuperscript{13}
In this study the first component was individual perception which is the non compliance to drugs of hypertension and diabetes mellitus.

The second component was modifying factors which include the demographic variables and structural variables. The demographic variables include age, sex, socioeconomic status and nature of treatment. The structural variables are the factors which will influence the drug compliance.

The third component is likelihood of action, which includes perceived benefits minus perceived barriers for preventive action. In this study the benefit will be the gain in knowledge by the client which will lead to change in behavior. The barriers may be the number of drugs taken and socioeconomic status, etc. In addition to this the components on cues to action is the health awareness programme which can motivate the client to take action.

The schematic representation is given in figure1

**VARIABLES**

Variable is a characteristic or attribute of a person or an object that varies within the population under study.¹⁴

The variables selected for the study are:
Drug compliance, complexity of medication, patient knowledge, social support and patient health provider interaction.
Fig-I Conceptual Framework based on Rosenstock’s and Becker and Maiman’s Health Belief Model

Individual Perceptions

Perceived susceptibility and seriousness:
Non compliance to drugs on Hypertension, Diabetes Mellitus

Modifying Factors

Demographic Variables:
Age, sex, socioeconomic Status, nature of treatment

Structural Variables:
Factors influencing drug Compliance

Perceived threats of drug non compliance

Cues to Action:
-Awareness Programme on factors
-Other sources of information

Likelihood of Action

Perceived benefits of preventive action: Gain in knowledge and change in behavior, complying to drugs
Perceived barriers of preventive action: Number of drugs, socioeconomic status other related factors

Likelihood of taking recommended preventive health action: Client following the awareness programme and complying with the drugs
Delimitation

The study is delimited to:
- people belonging to the rural and urban areas as selected for the study.
- people who can understand and speak / write Kannada.
- people who are present at the time of data collection.
- the factors as expressed by the people with hypertension and diabetes mellitus only

SUMMARY

This chapter dealt with background, need for the study, problem statement, purpose, objectives, assumptions, hypotheses, conceptual framework, operational definitions, variables and delimitations of the study.

Organization of the report

Further the report of the study is presented in the following chapters:
Chapter II-Review of literature
Chapter III-Methodology: This gives the brief description of the materials and methods
Chapter IV-Analysis and interpretation
Chapter V-Discussion: It discusses the study findings with other literature
Chapter VI-Summary and conclusion

The report ends with selected references and appendices.