CHAPTER – VI

SUMMARY, CONCLUSION, IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

This chapter presents the summary of the study, conclusion and its implications for nursing and health care services followed by its limitations. It also deals with the recommendations for future research.

Summary

The aim of the study was to identify the level of drug compliance and the factors influencing it.

Objectives of the study were 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 the 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.

The study used survey and evaluative approach to identify the level of drug compliance and factors influencing it. The key variables were level of drug compliance and factors influencing it. The conceptual framework was based on the Health Belief Model.
The study was conducted at Malpe, Kidiiyor, Alevoor, Athradhy, Marne and Herebettu of Udupi District. Populations under study were people residing at these areas and diagnosed and treated with hypertension or diabetes mellitus, the sampling method was purposive sampling.

The tools used to obtain relevant data from the subjects were Morisky scale, demographic performa, modified Srivastava’s socioeconomic scale, scale on knowledge, medical complexity, social relationships and patient provider interaction, SF-36 scale for health status. Demographic Proforma was used to obtain background information of the subjects. This tool had no scoring. It consisted of the assessment of demographic variables including age, sex, education, occupation, place of residence, socio economic status, nature of disease and nature of treatment.

Morisky scale was used to assess the level of drug compliance which is a self administered tool. It includes 4 statements with Yes/no. It is measured as 0-sure high adherence, 1-2- Medium adherence, 3-4- low adherence.

The Srivastava Socioeconomic scale was used in the study.

The factors were assessed with scales for Health status (SF-36) which is a scale with 36 questions to assess a persons health status and one prepared with statements on knowledge of patient, medical complexity, social support and patient-provider interaction. Each statement consisted of 3 options- always, sometimes, never.

Tool purchased – One of the tools (SF-36 a tool to assess the health status) used for the study was a standardized tool which had to be purchased from US. The tool’s license has been purchased for the English and Kannada versions. The tool had been got on 28.12.2006.
To ensure content validity, the tools along with blue print, objectives and criteria checklist were given to 5 experts in the field of community health nursing, community medicine, pharmacology and sociology. The experts’ were requested to give their opinion & suggestion on relevancy, accuracy & appropriateness of the items

The content validity index was 0.86.

The tool was pretested and the reliability of the tools was done by Cronbach alpha method. (α=0.8231). Pilot study was done to know the feasibility of the study.

Final data were collected after obtaining formal administrative permission from The Dean, Manipal College of Nursing, Manipal University, Manipal, head of department of community medicine, Kasturba hospital and District Health officer, Udupi

The obtained data was analyzed based on the objectives of the study and hypotheses by using descriptive and inferential statistics. Frequency and percentage were used to describe the selected demographic variables, Various non-parametric tests and chisquare were done to elicit the relationships and association between the level of drug compliance and the factors and area. Regression analysis elicited that there is a relationship between knowledge and medical complexity and level of drug.

Major findings of the study

The major findings of the study are as follows:

Demographic Variables
The data represented that, out of 1286 subjects, 684 (53.19%) belonged to rural area and 602 (46.81%) belonged to urban area. 246 (42.69%) belonged to 51 – 60 years of age in rural area and in urban area 182 (30.23%) belonged to 41-50 years. In both areas most of the samples were females i.e. 388 (56.73%) and 318 (52.82%) respectively. In rural 413 (60.38%) belonged to the low socioeconomic status and in urban 312 (51.83%) belonged to the medium category.

**Level of drug compliance**

In rural area 540 (78.95%) were adhering to drugs were as in urban area only 418 (69.44%) were adhering to the drugs.

**Nature of treatment**

Out of the samples in rural area 340 (49.71%) were getting treatment for hypertension and in urban 283 (47.01%) were getting treatment. In both areas most of the samples were following the allopathic system of medicine. For hypertension aten was prescribed for 92 of rural and 97 of urban people; Combination drugs included diuretics and other classes of hypertensive drugs. Vitamin B was the supplementary drug prescribed. For diabetes glibenclamide and metformin were the common drugs prescribed.

**Factors affecting drug compliance**

The mean and standard deviations of most of the scores were similar in the rural and urban area. There was a relation with knowledge ($\chi^2=113.081, p<0.001$), medical complexity ($\chi^2=90.814, p<0.001$) and husband/wife relationship ($\chi^2=7.831, p=0.02$).
Difference between the various populations

There was a significant association between area and level of drug compliance ($\chi^2=19.087, p<0.001$).

There was a significant difference between the area and factors only for knowledge of medicines taken ($Z=-2.078, p=0.007$), relationship between sample and family member ($Z=-4.668, p<0.001$) and friends ($Z=-4.527, p<0.001$) to motivate to take medicines and the health status score SF-36 ($Z=-2.117, p=0.034$).

Association between variables

There was an association between the disease and medication prescribed with drug compliance.

Further a regression analysis was done with the factors associated and it is concluded that there is a relationship between knowledge (OR= 1.28, CI= 1.20-1.35, p<0.001), medical complexity (OR= 1.14, CI= 1.10-1.19, p<0.001) and the people getting drug metformin (OR=0.278, CI= 0.08-0.88, p<0.03) with sure complying of drugs. In medium compliance there was a relation with hypertension (OR=2.70, CI= 1.39-5.24, p=0.003), diabetes (OR=2.84, CI=1.42-5.68, p=0.003), knowledge (OR=1.14, CI=1.07-1.22, p<0.001) and medical complexity (OR=1.05, CI=1.01-1.10, p=0.16). Hence it is concluded that knowledge and medical complexity were the two factors affecting drug compliance.

Evaluation of the awareness programme
There was a difference in the pre and post scores of knowledge and level of drug compliance.

*Other Findings*

Other findings of the study were the prevalence in the population covered of those taking medication. The prevalence rate according to this study was 2.6% hypertension, 1.91% diabetes mellitus and 0.09% for both.

**Conclusion**

The following conclusions can be drawn on the basis of the findings.

1. Out of the 1286 samples, 684 (53.19%) belonged to rural area and 602 (46.81%) belonged to urban area. 246 (42.69)
2. In rural area 540 (78.95%) were adhering to drugs were as in urban area only 418 (69.44%) were adhering to the drugs. There was a difference in the level of drug compliance and few factors between the rural and urban areas.
3. It is concluded that knowledge and medical complexity were the two factors affecting drug compliance.
4. There was a difference in the level of drug compliance and knowledge scores after the awareness programme.

**Implication**
Practice

The outcome of the study would be helpful for a community nurse to anticipate the needs of people undergoing treatment for chronic illnesses especially for continuing drugs, going for followup and plan nursing activities and implement the need based interventions for them as these illnesses are having burden on the family also.

The medical professional have an important role in giving explanations at the level of the people and assess the clients when they come for followup and to try to make regimens less complicated.

Pharmacists are now a days giving education to clients before giving drugs but they should avoid giving medication refills without doctors orders and giving independent prescriptions. This is not a finding but opinion given by respondents.

Education

Education should emphasize more on prospective nurses, medical professionals and pharmacists to impart health education to people with chronic illnesses on treatment which will emphasis on adhering to medication. Educationists should plan the strategies to overcome the gap between hospital based patient education and community based programmes so that the professionals will help the people in the community to overcome their reluctance to take medicines for chronic illness.

Administration
Administrators have a major role in planning activities at community level like increasing camps. The public health department has a major role to play to provide free of cost medicines like providing for communicable diseases, this will go a long way to bring down the burden of the diseases and increase productivity in the country.

**Research**

More research in this area would help to communicate the data to the public, to bring more awareness and to allocate more funds as chronic non communicable diseases are not given the due importance even though there are programmes for it.

**Limitations**

- The limited sample size will restrict generalization of the study findings.
- Non-probability sampling technique adapted in the study may limit the generalization of the study findings.
- Study being limited to specific geographic area in a particular district may limit the generalization.
- The study assessed behavior of taking drug and looked for the factors which being subjective may not be the actual findings, and hence limits on generalization.
- The factor on medical complexity had questions on the consumption of medicine, taking food along with medicine, etc which could not be elicited in the post test as it was based on the prescribed drug and beyond the researcher's control.

**Recommendation**
The following recommendations are made based on the present study for future research.

1. A similar study on factors can be done with qualitative approach.
2. A similar study can be replicated for other chronic disease conditions.
3. A comparative study can be undertaken for different disease conditions

**Summary**

This chapter dealt with summary of the study, major findings, conclusions and implications in nursing and pharmacy practice, limitation and recommendations for the future research.