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To Study The Impact Of Patient Counselling On Medication Adherence And Quality Of Life In Hypertension With Co-Morbidity In A Tertiary Care Teaching Hospital In A Rural Area

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Abstract: **Quality of life (QOL) is a reflection of a person's mental and physical well-being in their everyday life. The objective of the present study is: to know the impact of patient counselling on medication adherence and quality of life and to study the level of medication adherence in hypertension with co-morbidity condition patients. This study was conducted for a period of 6 months (November 2014 to April 2015) in RMMCH, Annamalai University, a 1260 bedded tertiary care teaching hospital in Tamil Nadu. Interventional group patients received patient counselling, patient information leaflets and pictorial patient information leaflets. WHO QOL-BREF questionnaires and Morisky 8- item medication adherence questionnaire scale were the tools used to assess medication adherence and quality of life (QOL). At pre counselling (baseline), 77 (66.6%) had low (>2), 41(32.2%) had medium (1or2) and 9 (7.2%) had high adherences respectively. Level of adherence after post counselling (second follow up) is an evident for progress in patient medication adherence as shown low 48 (37.7%), medium 57 (45.0%) and high 22 (17.3%) adherences. The average quality of life of patient at pre counselling (time of baseline) was 29.715 and at the post counselling (second follow up) increased to 59.28. A statistically significant difference was observed in all the four domains from pre- counselling to post-counselling at p=<0.001 (by using Mann-Whitney rank sum test).The intervention resulted to a positive impact on medication adherence and QOL.**

Keywords**: Patient counselling, medication adherence, quality of life and hypertension.**

I. INTRODUCTION

Hypertension (HTN) is the one of the cardiovascular diseases estimated to cause 7.1 million deaths annually, Accounting for 13% of all deaths globally [1] .In India, the prevalence of HTN reports was increasing rapidly in the urban, i.e. 25% of adults, and gradually even in rural areas, i.e. 10% of individuals are affected. The same study estimated that there were about 66 million hypertensive patients in India (out of 66 million hypertensive patients—34 million are in urban areas and 32 million in rural areas). This clearly indicates that medication non-adherence is the multifaceted problem, responsible for increasing the important medical and public health issues like worsened therapeutic outcome, higher hospitalization rates, and increased health care costs. [1]

The World Health Organization (WHO) describes poor adherence as the most important cause of uncontrolled blood pressure and estimates that 50-70% of people do not take their antihypertensive medication as prescribed [2]. Adherence is defined by WHO as "the extent to which a person's behaviour taking medication, following a diet, and/or executing lifestyle changes-corresponds with agreed recommendations from a health care provider" [3]. Adherence is dependent on numerous factors and has been shown to vary from 0 to 100% in different populations studied. Factors such as age, gender, low socioeconomic status and severity of disease, class of drug prescribed, number of pills per day, side effects of medication, patient's inadequate understanding of the disease and importance of the treatment, co-morbid medical conditions, lack of social support, poor patient-provider relationship, cost, forgetfulness and presence of psychological problems, especially depression, have all been shown to affect adherence in various populations [3-11].

There are many different methods for assessing adherence to medications osterberg categorized these methods as either direct or indirect. In direct methods measurement of concentrations of a drug or its metabolite in blood or urine, and detection or measurement in blood of a biologic marker added to the drug formulation are used. These approaches are expensive, burdensome to the health care provider, and susceptible to distortion by the patient. The indirect methods include asking the patient about how easy it is for him or her to take prescribed medication, assessing clinical response, performing pill counts, ascertaining rates of refilling prescriptions, collecting patient questionnaires, using electronic medication monitors, measuring physiologic markers, asking the patient to keep a medication diary, and assessing children's adherence by asking the help of a caregiver, school nurse, or teacher. These questioning the patient methods will help the healthcare provider for estimating the medication adherence indirectly without pain. [12]

Quality of life (QOL), a broad multidimensional concept, usually includes subjective evaluations of both positive and negative aspects of life. Health is one of the important domains of overall QOL; health related quality of life (HRQOL) questions about perceived physical and mental health and function have become an important component of health surveillance and are generally considered as valid indicators of service needs and intervention outcomes. [13-19]

II. MATERIALS AND METHODS

The study was a prospective interventional study conducted in the Medicine ward and coronary care unit (CCU) of Rajah Muthiah Medical College Hospital (RMMCH), Annamalai nagar, for a period of six months from December 2014 to April 2015. The study was approved by the Institutional Human Ethics Committee & Informed Consent Form was obtained from the eligible patients. Patients were selected on the basis of inclusion criteria and exclusion criteria.

Inclusion criteria:

• Inpatients of Medicine ward and coronary care unit (CCU) who were diagnosed on medication for hypertension

• Age of 18 years and above of either sex.

• Patients who are willing to participate and given the consent form.

Exclusion criteria:

• Patients with comorbidities of more than 4 diseases.

• Pregnant/lactating women.

Sources of data:

Inpatients Patient case records, medication charts and lab reports.

Materials used Informed consent form, patient data collection form, patient information leaflets (PILS) regarding disease and drugs, diary card, questionnaires [Morisky Medication Adherence Scale (MMAS) and Quality of Life (QOL) Scale].

Study procedure:

After obtaining the inform consent the required details/data were obtained from case records of inpatients, and by direct inter views. The patients were also informed to come for the first and second follow-ups after one month from the base line or from the date of enrolment. The patients were interviewed and their socio demographic details were recorded at the baseline patient data collection forms and subjects were not provide with any counselling and PILS (patient information leaflets) to the patients, a dairy card was provided and which was collected at the end of the study. In order to know the medication adherence behavior (MAB) they were provided with the counselling on various aspects such as, drugs,

lifestyle changes, and their disease management, and told them to inform if any unwanted and unintended effect of drugs occurs and PILS (patient information leaflets) in the first follow-up respectively in the second follow-up. Patient mediation adherence and QOL were assessed by using standard questionnaires, i.e. Morisky medication adherence scale (8 items), to know their medication adherence and QOL, respectively, in the baseline and follow-ups. The answers given by them were recorded in each follow-up and blood pressure values were noted. At the end of the second follow-up, diary cards were collected back. To know the impact of student clinical pharmacy services and types of counselling services provided by the student clinical pharmacist. The obtained data were subjected for statistical analysis.

Statistical methods:

Descriptive statistical analysis has been carried out in this study. Significance is assessed at the 5% level of significance.

III. RESULTS

Table 1 Social demographic characterizes and life habits of hypertensive patients (n=127)

Age wise distribution	**Frequency**	**Percentage (%)**
30-39	11	8.66
40-49	14	11.02
50-59	44	34.64
60-69	31	24.40
70-79	19	14.96
80 or +	8	6.32
Gender		
Male	86	67.71
Female	41	32.28
Body mass index (kg/m^2)		
<18.5(Normal)	26	20.4
18.5-25.0(Over weight)	51	40.15
25.0-30.0(Obese)	31	24.4
>30.0(Morbidly obese)	19	14.9
Education		
Illiterate	76	59.08
Primary	42	33.07
High school	4	3.14
College or university	5	3.93
Smoker		
Yes	98	77.16
No	29	22.83
Alcohol consumption		
Yes	86	67.7
No	43	33.8

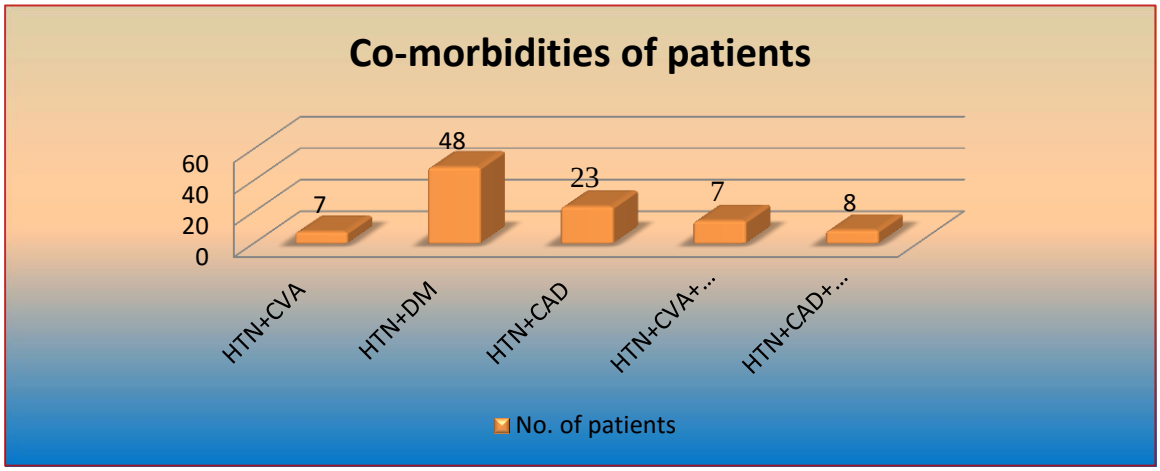

Figure 1 Co-Morbidities with Hypertensive Patients

Table 2 MEDICATION ADHERENCE IN ENROLLED PATIENTS (n=127)

	Pre-counselling			Post-counselling					
	Baseline			First follow up			Second follow up		
	Low (>2)	Medium (1or2)	High (=0)	Low (>2)	Medium (1or2)	High (=0)	Low (>2)	Medium (1or2)	High (=0)
Number of Patients	77	41	9	69	45	13	48	57	22
Percentage (%)	60.6	32.2	7.2	54.3	35.4	10.3	37.7	45.0	17.3

60.6% of them had low medication adherence at baseline were improvement in the compliance was observed in the first follow up with medium (35.4%) , high(10.3%) and second follow up with medium (45.0%) , high(17.3%).

Table 3 QUALITY OF LIFE DOMAINS SCORE

Domains	Pre-counselling	Post-counselling	
	Baseline score	First follow up	Second follow up
Physical activity	30.087±8.08	42.56±7.25	69.661±8.65
Psychological	29.591±6.74	39.29±8.25	67.969±9.15
Social relationship	28.485±5.06	31.45±6.01	47.496±7.26
Environment	30.724±7.68	39.38±5.98	48.147±7.23

Statistical analysis of data using:

Mann-Whitney Rank Sum Test (level of significance = 0.05). The difference in the median values of the base line and second follow up groups is greater than would be expected by chance; there is a statistically significant difference (P = <0.001). Follow up 1 and 2 are statistically significantly difference compared to baseline

IV. DISCUSSION

In this study, 127 patients were accepted and involved/participated. The consented people were participated and only seven were dropped out, due to inability to come for regular follow-up, due to negligence, age factor, illiteracy, and left the place. Of these 86(67.71%) were male and 41(32.28%) are female. Prevalence depends upon several ethnic, genetic, environmental & psychosocial factors. In India prevalence of hypertension (B.P. ≥ 140/90 mm of Hg) is reported to be 25-30% in urban & 10-15% in rural adults and it further increases with age. In elderly Indian population, a prevalence rate of 51.8% is reported[20]. In our study the prevalence of hypertension is found to be 35.43% more in males than in females. Higher prevalence of hypertension was reported in patients among the age group of 50-59 i.e., (34.64%). Among 127 patient's diabetes mellitus was the most common associated comorbidity which accounts for 37.8%.

The comparative results of the baseline to the second follow-up shows that there is a good improvement in medication adherence and the various factors influencing for the non-adherence rate was reduced from the baseline to the second follow-up. This point strongly suggests that the pharmacist influence had a very important role in the medication adherence behaviour.

The various QOL domains scores showed a good improvement when compared the baseline to first follow-up and from first follow-up to second follow-up, and the baseline to second follow-up. The final individual domains suggest that the overall QOL was improved. This strongly suggests a positive influence on their QOL. However, still there is a need of continuous monitoring to manage their disease/QOL in a constant manner.

The dairy cards were provided at baseline as a reminder to their medications returned back was less. This may be due to forgetfulness, lack of education, and negligence. This showed more observation on returning of this dairy card will also enhance the disease management.

V. CONCLUSION

Our study revealed that the patients were unaware about the basic concept related to hypertension and patient counselling has a vital role in improving medication adherence and quality of life. By the end of our study there was a significant increase in the medication adherence score and quality of life score of four domains. It is evident that patient education produced a significant improvement in quality of life, medication knowledge and the effect in adherence behaviour. Patient counseling aided and had a positive impact on patient's understanding of their illness and the role of medications in its treatment, improved medication adherence, and improved Quality of life for the patients. Moreover, a good professional rapport has been built between the Pharmacist and the Patient

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