



## ASSESSMENT OF PHARMACIST MEDIATED PATIENT COUNSELING ON MEDICATION ADHERENCE IN HYPERTENSION PATIENTS OF SOUTH INDIAN CITY

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### ABSTRACT

Non adherence to antihypertensive medication is a major problem among patients with hypertension, and has been identified as one of the main causes of failure to achieve adequate control of blood pressure (BP). In turn, patients with hypertension who have elevated BP as a result of their poor adherence to medication remain at risk for serious morbidity and mortality. Hence this study was undertaken with an objective to measure the adherence of Antihypertensives therapy (AT) in hypertension patients.

A Pharmacist mediated patient counseling was carried out with pretested questionnaires on a convenience sample of 123 patients with antihypertensive therapy at the government general Hospital, Gulbarga Karnataka. Morisky scale to measure adherence to medications, in all questionnaires were shown were highly significant with values  $P < 0.001$ ,  $P < 0.05$ ,  $P < 0.001$ ,  $P < 0.001$  respectively. This showed the pharmacist educational intervention has improved the adherence in hypertensive patients.

**Key Words:** Hypertension Medication adherence, measurement, Morisky scale.

### INTRODUCTION

Medication adherence is defined as the extent to which patients take drugs as prescribed by their health care providers.<sup>1</sup> Adherence to medication has also been defined as the extent to which a person's behavior coincides with medical or health advice.<sup>6</sup> Often, terms such as compliance and concordance are used in its place. Hypertension is an important public health challenge because of the associated morbidity and mortality caused by cardiovascular diseases and the cost to society. Hypertension affects nearly 26 per cent of the adult population worldwide. By 2025 it is projected that 29% of the world's population (over 1.56 billion adults) will have hypertension<sup>2</sup> Appropriate treatment of hypertension significantly reduces the cardiovascular mortality and morbidity.

In India, the prevalence of hypertension is reported to be increasing rapidly in the urban areas, and the same trend is spreading gradually to rural areas. Though the prevalence of hypertension in India has been reported to vary regionally, recent pooled analysis of several epidemiological studies in India suggest that hypertension is present in 25% of adults in the urban areas, and in 10% of individuals in the rural areas.<sup>3,4</sup> It is estimated that there were about 66 million hypertensives in India (32 million rural and 34 million urban). In hypertension patients, adhering to prescribed medication is critically important for controlling blood pressure and reducing the associated risk of cardiovascular complications such as stroke<sup>7</sup>. The patients with poor adherence to hypertension treatments are at a higher risk of serious adverse events, including kidney failure, blindness, stroke, and heart disease<sup>8</sup>. The high blood pressure is particularly liable to be a result of non adherence of prescribed medication. The reason is because hypertension has no symptoms, unless it is very severe<sup>9</sup>. Delay in taking appropriate doses by patients can worsen their condition. The symptoms of risk associated with poor adherence can take quite some time to appear (Silent Killer) when compared with

other chronic diseases<sup>10</sup>. However, information on the degree of antihypertensive medication compliance in our country is lacking.<sup>11</sup>

The Objective of this study was to find out the factors affecting antihypertensive medication adherence and effectiveness of pharmacist intervention in improving medication adherence.

### MATERIALS AND METHODS

It is a prospective study to determine adherence to anti-hypertensive therapy in patients attending outpatient medical department at Government General Hospital, Gulbarga of Karnataka.

The survey was done by using validated structured questionnaires given in table-1 (Morisky Scale) which is simple, cheap, and viable and can be done speedily as the primary method for data collection.<sup>6</sup>

The Study group included 123 cases of essential hypertension attending Outpatient department (OPD) who could be followed up as required. They were divided in to two groups as test group and control group. The test group patients received patient counseling regarding drugs, lifestyle modifications, diet and other monitoring parameters including the patient information leaflets and control group received only patient information leaflets for their future reference and reading in local language. The follow-up of patients were done from baseline to follow-up -1 follow-up -2 for treatments. The patients were reminded by telephonically for their visits to hospitals.

The data were collected from patients by useable medical records that met our sample frame and matched with the questionnaire data. The data was collected from October 2010 to July-2011.

### Inclusion criteria

All Patients diagnosed with hypertension of either sex, aged 18 – 70 years and willingness to participate.

**Exclusion Criteria**

Patients with portal hypertension, pre-eclampsia and patients diagnosed with other co-morbid diseases such as diabetes mellitus, dyslipidemia, heart failure, hepatic dysfunction, psychiatric disorder and cancer. To identify the relationship of adherence level on hospital admission, an independent Sample T-test is used to determine whether there is a significant difference between the average values of the adherence level made with two different conditions (yes or no) for hospital admission.

**PATIENTS DEMOGRAPHY**

**Age**

It seen from the (table 1)that majority of the study population were in the age group of 40 to 69 years (78.04 %).Only two individuals were in the age group of 20 30 years and 3 were above 80 years.

**Gender**

In the present study male constituted 51.22 % and females were 48.78 %

**Education**

Most had some education (up to undergraduate level). But this was not a highly educated group as can be seen from the (table 3) In the present study 60.2 % of study population were undergraduates. Graduates and Post graduates constituted merely 4.8 %.

**RESULTS AND DISCUSSION**

The total 123 patients were participated in study the patients demography were shown in table (1,2,3,4,5)The final response rate from 123 patients to the Morisky scale to measure adherence to medications, in all questionnaires were shown were highly significant with values  $P < 0.001$ ,  $P < 0.05$ ,  $P < 0.001$ ,  $P < 0.001$  respectively as shown in (figure 4), further adherence to antihypertensive drugs before intervention was 109 and after pharmacist intervention it was improved 113 as shown (figure 5)in this showed the pharmacist educational intervention has improved the adherence in hypertensive patients.

**CONCLUSION**

Blood pressure control can be achieved by improving adherence which will eventually reduce morbidity and mortality. Data from the National Committee for Quality Assurance (NCQA) indicates that a reduction in SBP by 5 mm Hg can reduce the incidence of stroke mortality by 14%, coronary heart disease mortality by 9% and total mortality by 7% .<sup>13</sup> Furthermore, better control of BP would translate into decreased rate of cardiovascular morbidity, mortality and decreased health-care resource utilization. Therefore a cost-effective intervention would be to improve adherence to antihypertensive pharmacotherapy as hypertension treatment is itself generally cost-effective<sup>14</sup>.

Many strategies could be developed and implemented for improving adherence for the hypertensive patients by

Governments and others alike that teach patients responsibility for and involvement in his/her health care program, there by the hypertension patients life could be improved.

This study had certain limitations as the study was conducted among diagnosed outpatients attending the Government General Hospital of Gulbarga, Karnataka. The measure used for this study is based only on self reports (Morisky Scale). Many other measures could also be applied to identify patients with poor adherence, such as refill, pill counts, and electronic monitoring. Hence additional studies are required in different geographical areas with larger sample size. This study does not validate the adherence to non pharmacological methods in control of hypertension.

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**Morisky simplified self report measure of adherence scale**

1. During the last 3 months, have u at times been careless about taking your antihypertensive medications  
a) yes b) no
2. During the last 3 months, have you ever forgotten to take your antihypertensive medications you felt better  
a) yes b) no
3. During the last 3 months, have you ever stopped taking your antihypertensive medications you felt better  
a) yes b) no
4. During last 3 months, have you ever stopped taking your antihypertensive medications you felt better  
a) yes b) no

Table-1

Age	Frequency	Percent
20-29 yrs	2	1.63
30-39 yrs	11	8.94
40-49 yrs	24	19.51
50-59 yrs	34	27.64
60-69 yrs	38	30.89
70-79 yrs	11	8.94
≥80yrs	3	2.44
Total	123	100.0

Figure-1 Age wise distribution of study population

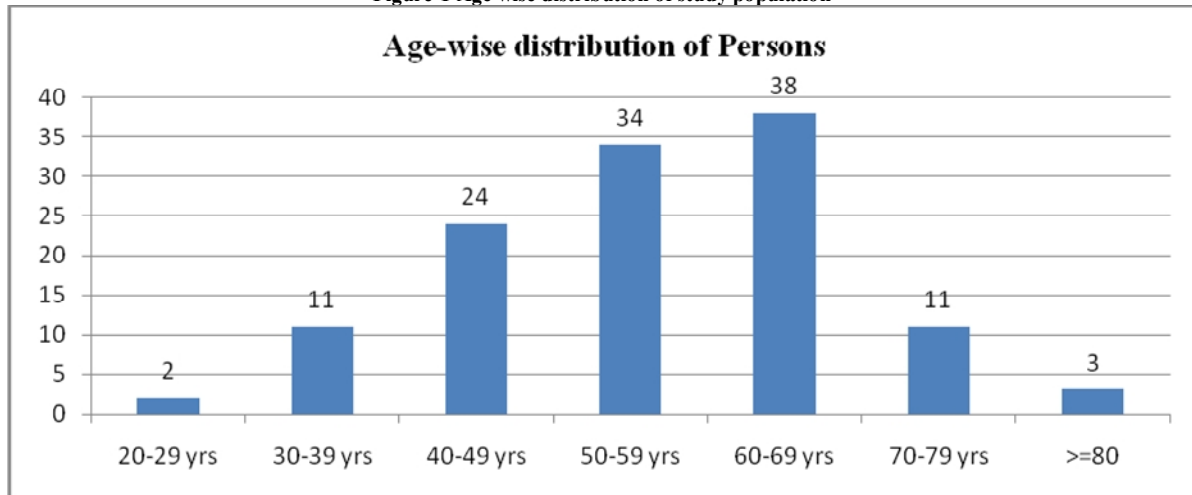


Table-2

Gender	No.	%
Male	63	51.22
Female	60	48.78
Total	123	100.00

Figure-2 Gender wise distribution of study population

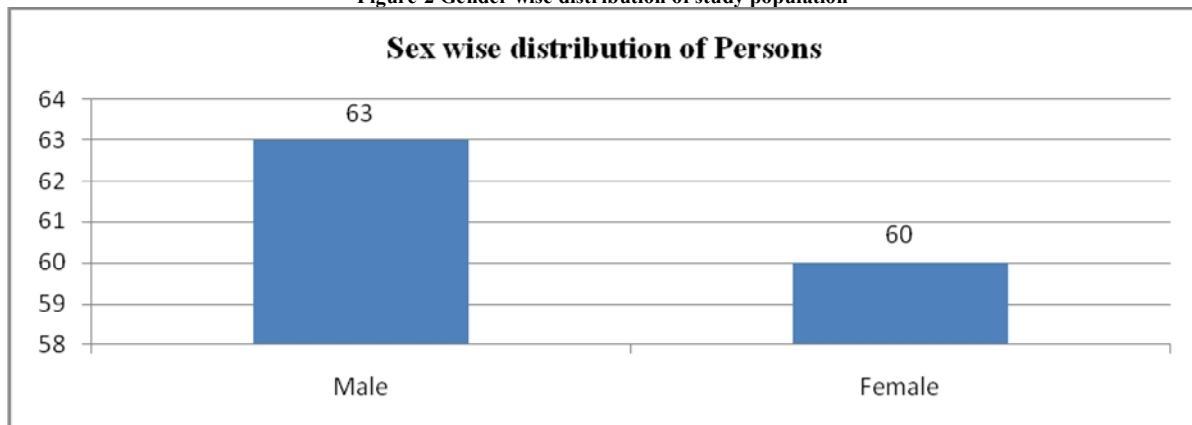


Table-3

Education	Frequency	Percent
Illiterate	30	24.39
Undergraduate	80	65.04
Graduate	10	8.14
PG	3	2.43
Total	123	100.00

Figure-3 Distribution of study population by educational status

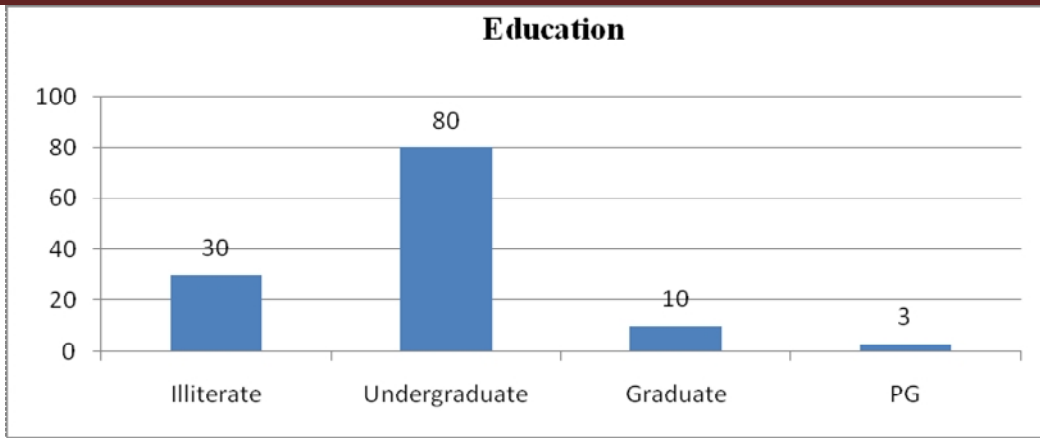


Table-4

	INTERVENTION (n=123)		Chi-square	P-value	Significance
	Before	After			
During the last 3 months, careless about taking antihypertensive medications	46	9	32.06	P<0.001	Highly significant
During the last 3 months, forgotten to take antihypertensive medications when felt better	16	4	6.58	P<0.05	Significant
During the last 3 months, ever stopped taking your antihypertensive medications when felt better	17	2	11.17	P<0.001	Highly significant
During last 3 months, ever stopped taking antihypertensive medications when felt worse	15	1	11.30	P<0.001	Highly significant

Figure-4 Results of adherence before and after intervention

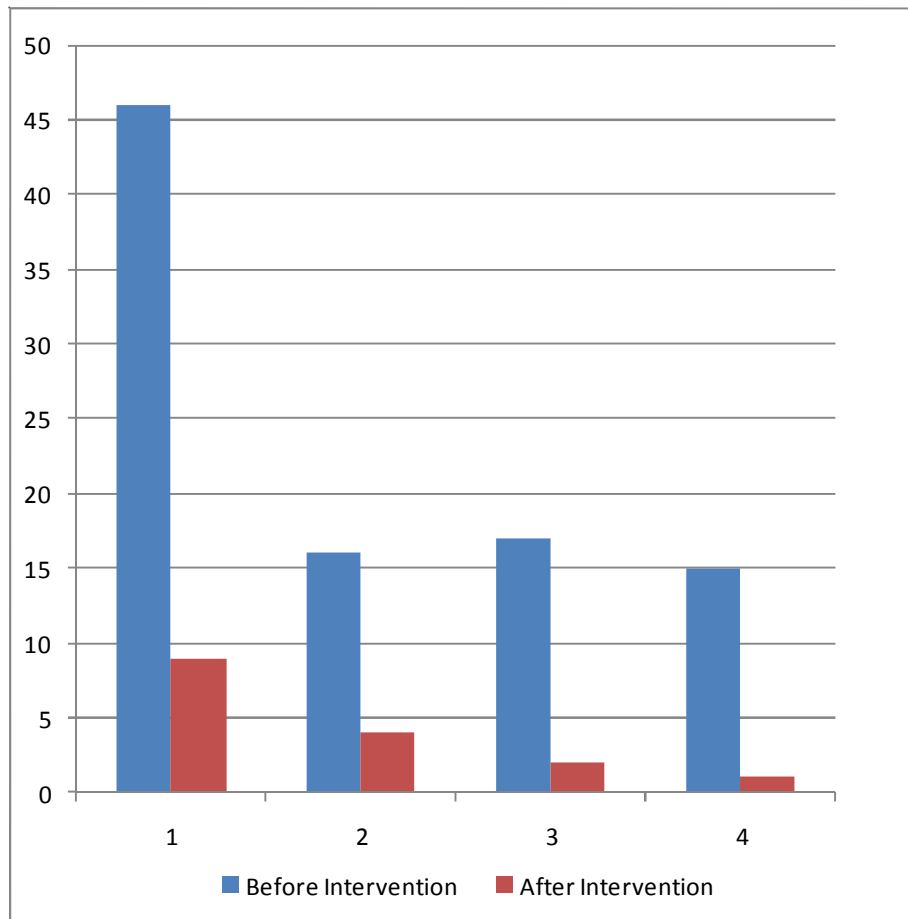
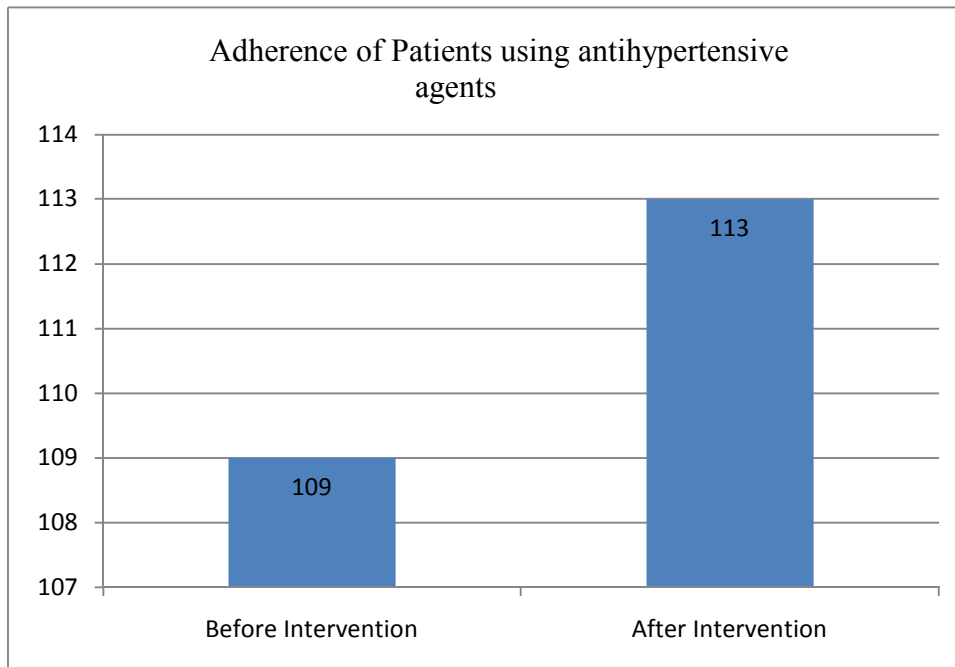


Table-5

Pharmacist interventions baseline and final interventions	Adherence of Patients using antihypertensive agents
Before Intervention	109
After Intervention	113

Figure-5 Pharmacist interventions baseline and final interventions using antihypertensive agents



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