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Research Article

**IMPACT ANALYSIS OF PATIENT COUNSELLING ON  
MEDICATION ADHERENCE IN PATIENTS SUFFERING  
FROM HYPERTENSION AT DISTRICT GENERAL HOSPITAL  
AMRAVATI****Hrishikesh Gupta<sup>1\*</sup>, Punam Kela<sup>2</sup>, Raghavendra Bhutada<sup>2</sup>, Rahul Pethe<sup>2</sup>**<sup>1</sup>Assistant Professor, Government College of Pharmacy, Kathora Naka, Amravati, Maharashtra 444604, India<sup>2</sup>Pharm D Intern, Government College of Pharmacy, Kathora Naka, Amravati, Maharashtra 444604, India**Abstract:**

**Background:** Hypertension is one of the leading causes of deaths and is regarded as silent killers that have caused approx. 2.3 million deaths in India in 1990's and this figure of deaths is supposed to be doubled by 2020. **Objective:** The sole objective of the study was to assess the medication adherence of the patients before and after counseling and to analyze the impact of patient counseling in patients. **Methods:** A cross sectional study was conducted at the District General Hospital, Amravati using Morisky-8 Medication Adherence scale in patient with hypertension without any co-morbidity. **Results:** Study performed on 132 subjects revealed that 77% of the subjects shown low adherence while only 5% shown complete medication adherence before counseling. After counseling, the subjects who were compliant with the therapy rose to 41% while those who weren't compliant decreased to 11%. Two way ANOVA analysis of the data obtained revealed that there was significant improvement ( $P < 0.0001$ ) in medication adherence and medication knowledge.

**Key words:** Patient counseling, Medication adherence, Hypertension, Morisky Scale, Patient information Leaflet

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**INTRODUCTION:**

Hypertension is a condition in which arterial blood pressure is chronically elevated. The blood pressure occurs within particular range so cut off levels are defined according to their effects on patient health. [1] Cardiovascular diseases caused 2.3 million deaths in India in 1990; this is projected to be doubled by the year 2020. Hypertension is directly responsible for 57% of all strokes deaths and 24% of the coronary heart disease deaths in India. The reported hypertension prevalence is 12 to 15% in 90s. [2]

Hypertension (HTN) is one among the several chronic illnesses which is now the leading cause of cardiovascular diseases worldwide. If not controlled, hypertension can lead to various life threatening complications. Lack of patients understanding of the disease, medications and life style modifications for the management of hypertension might be responsible factor for this situation. Hypertension treatment requires a high level of self-management (e.g., taking medications strictly as per prescribed regimen) and knowledge about this is a component of the ability to successfully control the blood pressure. Poor compliance has been linked with adverse events and hospital re-admissions. [3] Medication adherence is defined by the World Health Organization as "the degree to which the person's behavior corresponds with the agreed recommendations from a health care provider."

Medication adherence is one of the most important factors which are responsible for positive therapeutic outcome in patients suffering from the chronic illness. The efficacy of the treatment is directly related to the medication adherence of the patient, whereas patient non adherence to the therapy may lead to therapeutic failure and increases unnecessary cost to the patient. In India, cost of non adherence is more alarming and approximately 50% of the patients with cardiovascular complications have poor adherence to their prescribed medication. [4]

Contributory factors for medication non adherence in India are: illiteracy, poor understanding of the disease and its treatment, poor socio-economic status, busy schedule of doctors and poor involvement of community pharmacist in providing patient education. [4]

Educating patients about prescription drugs, their role in controlling the disease and benefits of being adherent to the medication are essential aspects of health care. Some of the methods of intervention to improve medication adherence include patient education, reminders through mobile phone tools and

applications like "Medisafe meds and pill reminders", "Reminders" and "Medication reminder and pill tracker", self-monitoring, counseling, family therapy, psychological therapy, manual telephonic follow up, supportive care, simplifying and improving drug regimens.

Our study aims to determine impact of patient counseling on medication adherence and therapeutic goals achieved in hypertensive patients. In present study, Morisky adherence questionnaire-8 was used two times before and after counseling to assess medication adherence through patient counseling with the help of leaflet.

**MATERIALS AND METHODS:****Research design:**

**Study Site:** District General Hospital, Amravati.

**Study Duration:** Six months

**Study Design:** Cross sectional study

**Study Criteria:** Patients were enrolled into the study as per the following criteria

- **Inclusion Criteria:**

1. Patients diagnosed with hypertension irrespective of co-morbidities present.
2. Patients of either sex who have completed 18 years of age.
3. Native patients/ patient with valid contact information.
4. Participants who were willing to co-operate.
5. Patients attending outpatient department (OPD).

- **Exclusion Criteria:**

1. Patients who presented subclinical symptoms
2. Pregnant women.
3. Portal hypertension, preeclampsia patients and patients with secondary hypertension.

- **Sample size:**

Total 177 subjects were enrolled out of which 132 were successfully followed up.

**Material used:**

1. Case sheets of the patients diagnosed with the hypertension
2. Morisky's Medication Adherence Questionnaire (MMAQ)
3. Patient medication counseling literature and Patient Information Leaflet
4. Feedback Form

Patient enrolled were subjected to inclusion as well as exclusion criteria. Informed consent form was taken from each patient at the time of enrollment.

Patient details regarding demographic details, disease, treatment etc were collected from medical record and counseling. Patients were given MMAQ before and after two weeks of counseling. Each MMAQ was then analyzed and scored appropriately. Based on the data obtained from MMAQ, patient's medication adherence score before counseling and after counseling was analyzed. MMAQ score was given based on medication adherence of the patient where score of "8" was considered as "no adherence/very low adherence" and "0" as high adherence. [5]

### Therapeutic Goals-

Therapeutic goals were classified into three categories which as follows:

- 1) **Achieved**- systolic pressure = 100-120 mmHg and diastolic pressure = 70-90 mmHg.
- 2) **Partially achieved**- blood pressure after counseling < blood pressure before counseling but has not yet achieved normal range.
- 3) **Not achieved**- Patient's blood pressure remained unchanged or increased than its previously measured value.

### RESULTS:

#### Gender:

In the present study, out of 132 cases, 48% (n=64) subjects were female and 52% (n=68) subjects were male. This reveals that hypertension is almost equally distributed between male and female population.

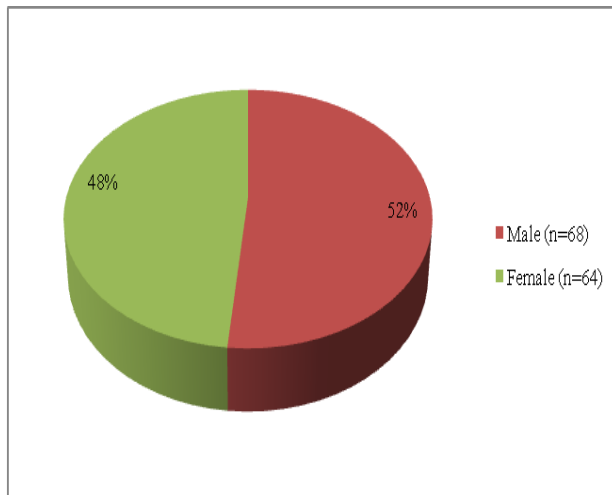


Fig. 1: Gender Therapeutic goal:

Out of all the 132 subjects therapeutic goal was achieved in about 58% (n=77) of the subjects while it was achieved partially in 36% (n=47) of subjects while in 6% (n=8) of the cases therapeutic goal was not achieved.

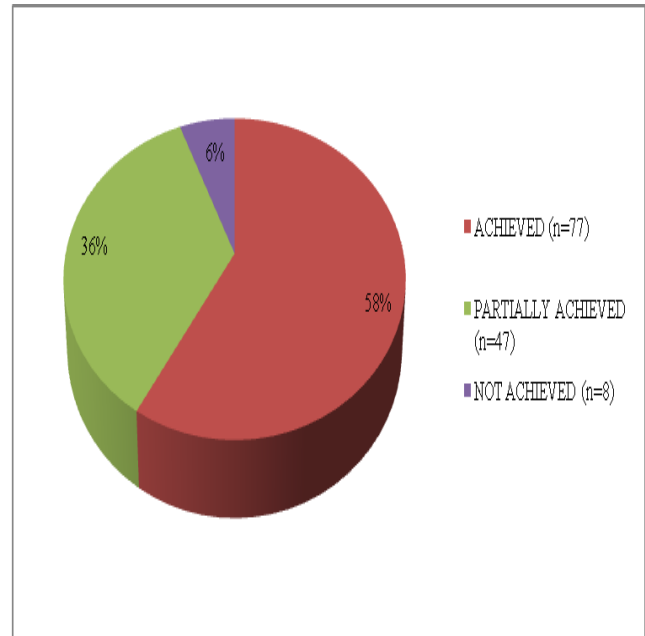
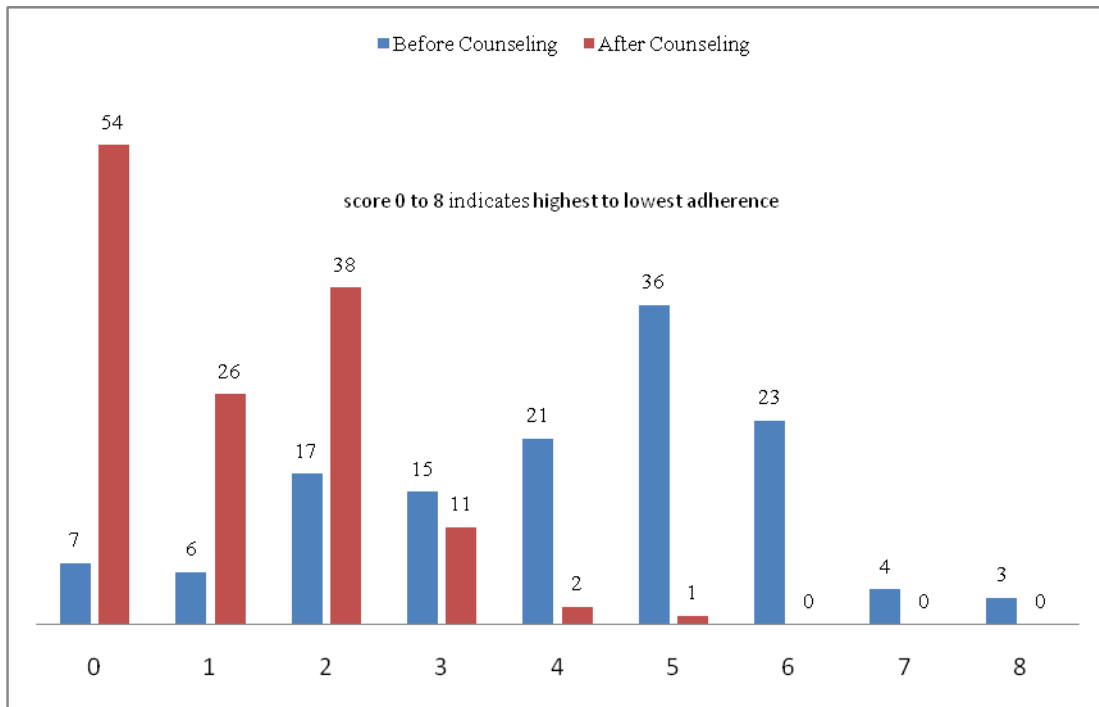


Fig.2: Therapeutic Goal Morisky Score:

Before counseling 3 subjects scored "8" out of "8", 4 subjects scored "7" out of "8", 23 subjects scored "6" out of "8", 36 patients scored "5" out of "8", 21 subjects scored "4" out of "8", 15 subject scored "3" out of "8", which indicates low medication adherence whereas, only 17 subjects had scored "2" out of "8" and 6 subjects scored "1" out of "8" which indicate the medium adherence towards the therapy while only 7 subjects had scored "0" out of "8" which indicates the high adherence towards the therapy. Majority of the subjects have scored in between "4-6" out of "8" which indicates low medication adherence.



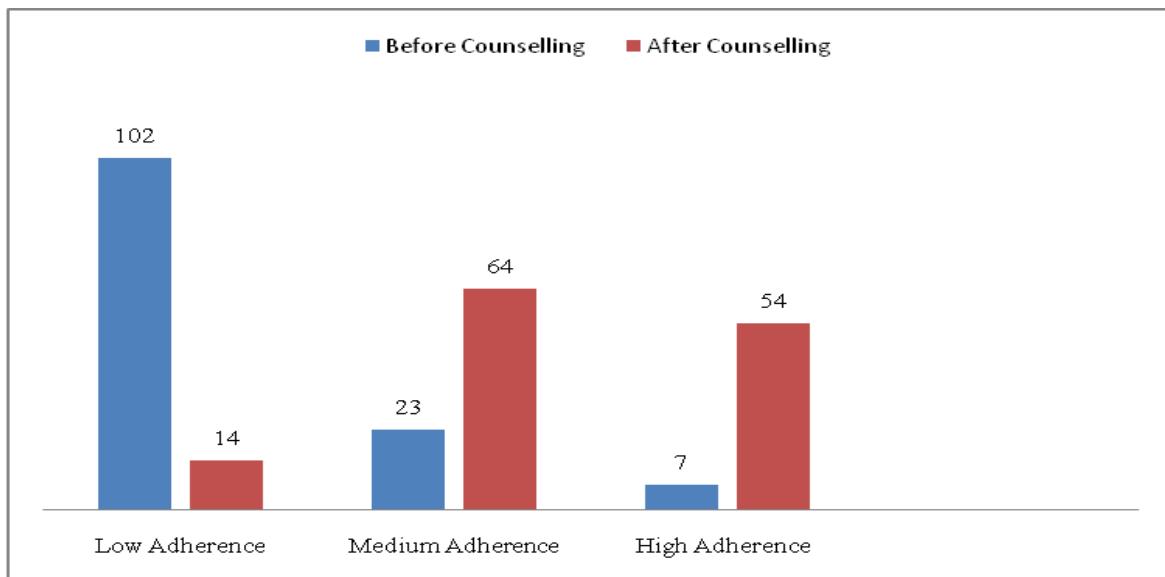
**Fig. 3: Comparison of Morisky score before and after counseling**

Whereas, after counseling, 54 subjects scored “0” out of “8” which indicates the high adherence to the therapy, 38 subjects scored “2” out of “8”, 26 scored “1” out of “8” which indicates the medium adherence while only 11 subjects scored “3” out of “8” alongside with the 2 subjects scoring “4” out of “8” and 1 subject scoring “5” out of “8” which indicate

low adherence. There was significant increase in the medication adherence in subject after the counseling.

#### **Medication Adherence:**

Out of 132 subjects, 77% (n=102) were found to have low adherence while only 18% (n=23) of the subjects have medium adherence and out of the entire subjects only 5% (n=7) shown complete adherence toward the therapy before counseling.



**Fig. 4: Medication adherence of subjects before and after counseling**

Whereas, after counseling, out of all the 132 subjects, 48% (n=64) shown medium adherence while 41% (n=54) shown the high adherence and only 11% (n=14) shown the low adherence which shows significant rise in the Patient's medication adherence after the counseling.

### DISCUSSION:

This study reveals that predominance of hypertension is in compliance with the findings of descriptive survey carried by Mohammed Jameel Patel. [3] An ad-hoc modified version of the Systematic Coronary Risk Evaluation (SCORE) system should have been applied in order to study more parameters and to determine the risk-benefit ratio of each parameter in the designated population; but, because of time constraint and patient cooperation issues at outpatient department, this kind of evaluation was impracticable to perform. [6] The current study emphasizes on patient counseling as a key to improve adherence and quality of life of the sufferer. Quality of life (QoL) is the subjectively determined personal satisfaction with daily life, as influenced by the individual's evaluation of his/her physical, psychological, social, and spiritual well being. World Health Organization defines QoL as "an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns." Hence, communication with the patient is the key to medication adherence. This is consistent with the study performed by Christopher Henzte. [7] However, the results are unsatisfactory which is consistent with the Camilla Torlasco study. [5] The scope of current study was limited due to small sample size of (n = 132) from which a definitive conclusion about improvement in patient's medication adherence is difficult to determine. In addition to patients coming to the District General Hospital were mostly from poor literacy and socio-economic background hence, which, in part is a barrier to achieve expected outcome. [8]

A study performed on hypertensive patients at primary health care at Malaysia by Azuna Ramil concludes that poor patient compliance is associated with loss of blood pressure control. [9] This study supports our findings as patient adherence and blood pressure were improved simultaneously after counseling. Thus, spending more time in patient counseling is directly related to the positive impact on patient medication adherence and better control over blood pressure. [10]

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