

A Community Based Study to Identify the Reasons for Non-Adherence in Hypertensive Patients

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ABSTRACT

WHO describes adherence 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. Poor adherence to prescribed regimens can cause serious health complications.

Objective: To identify the reasons for non-adherence in hypertensive patients using validated questionnaire from literature.

Methodology: A prospective cross sectional study was carried out in Mangalore in Karnataka from September 2019 to March 2020. Hypertensive patients were selected and interviewed with validated questionnaire from literature to assess their medication adherence and reasons for non-adherence. Data were analysed using Microsoft Excel.

Results: 150 subjects participated in the study among which 45.3% were males and 54.6% were females. The most common reasons for non-adherence were forgetfulness (62.6%), travels (36.6%), drugs out of supply (26.6%) and relief from symptoms (18%).

Conclusion: The affordability of medicines is also one of the main factors for medication non-adherence. According to our study, only a negligible population of subjects has affirmed medication expenses as the reason for non-adherence. Gender difference had no much significant in medication adherence also social habits since study population do not include much alcoholics or smokers and hence the correlation cannot be analysed. The factors driving patients' adherence to medications are multifactorial. Common barriers to adherence are under the patient's control, so that attention

to them is a necessary and important step in improving adherence.

Keywords: Medication adherence, Hypertension

INTRODUCTION

Medication adherence is defined by the WHO as "the degree to which the person's behavior corresponds with the agreed recommendations from a health care provider. ^[1] Poor adherence to prescribed regimens can result in serious health complications. Increasing the effectiveness of adherence interventions may have a greater role on the health of the population than any improvement in specific medical treatments. ^[2]

Non-adherence to medications can results from intentional as well as unintentional actions. A patient's decision about whether or not to comply with a medication regimen happens outside the walls of the hospital and clinic. ^[3]

The adherence rates of antihypertensive drugs remain below optimum and approximately 40% of patients with HTN are reported to be poor adherers. The control of blood pressure has improved considerably with the use of antihypertensive agents but poor adherence with medication still remains a problem among hypertensive patients. ^[4]

These consequences may result in severe health crisis in economic, clinical and humanistic outcomes (ECHOs). They include worsening of current disease condition, increased co morbid diseases,

increased health care costs, and death. However, non-adherence shows greater risk in older people which finally results in poor disease control which could be associated with multiple morbidities and poly pharmacy.^[5,6]

More than 26% of the adult populations worldwide have been diagnosed to have hypertension^[6] It is also one of the major causes of premature death and 7.1 million of people die from hypertensive complications annually. Medication-related hospital admissions due to poor adherence its total cost estimate for medication non-adherence ranges from \$100 billion to \$300 billion every year^[7] Poor adherence is the most significant cause of uncontrolled BP. The factors driving patients' adherence to medication are multifactorial. Identifying factors that affect medication adherence is the first step towards improving adherence.^[8] The present study had an objective to identify the reasons for non-adherence in hypertensive patients

MATERIALS & METHODS

Study Site: The present study is a cross sectional study conducted in Kankanady, Valachil, Valencia, Jeppu, Padil of Mangalore in Karnataka.

Study Design: The present study is a prospective cross sectional study

Sample Size: The study was limited for a sample of 150 patients based on the time schedule allotted for the project including other circumstances.

Study Duration: Study was conducted for duration of 6 months. (September 2019 to March 2020)

Ethical clearance:

The protocol for the study was approved by the Institutional Ethics Committee (IEC) of Srinivas Institute of Medical Science, Mukka, Mangalore (Ref no: EC/2019/10/2820/1).

Study Criteria:

Inclusion criteria:

- Patients of age 31-70years of either sex with hypertension

- Patients on oral antihypertensive agents.
- Patients who are willing to participate in the study

Exclusion criteria:

- Patients with visual and hearing impairment
- Pregnant and lactating women
- Terminally ill patients
- Patients <18years or>70years
- Patients who did not agree to participate in the study

Preparation of inform consent form (ICF)

Inform consent form was prepared in Kannada and English and the same was used. The consent form was orally explained to the participants before filling it. Only the participants willing to fill ICF were included in the study.

Development of questionnaire:

A set of questions was designed as a tool, using the existing literature to identify the reasons for non-adherence among the hypertensive patients. Each participant can choose multiple reasons for non-adherence. The questionnaire was designed in English. It consists of 10 statements to assess the patients' reasons for non-adherence. The patients who met the inclusion criteria were interviewed to assess the reasons.

DATA ANALYSIS: Statistical analysis involves collecting and scrutinizing every data sample in a set of items from which samples can be drawn and were analyzed using Microsoft Excel.

RESULT

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

A total of 150 participants participated in the study. The Socio-demographic characteristics of participants are given in table 1.

Table.1- Socio-Demographic details of patients (N=150)

Characteristics	Number	Percentage (%)
Gender		
Male	68	45.3
Female	82	54.6
Age (in years)		
31-50	11	7.3
51-70	115	76.6
71-90	24	16
Educational level		
Elementary school	36	24
High school	50	33.3
College/ university	64	42.6
Occupation		
Government employee	26	17.3
Private employee	49	32.6
Self	75	50
Annual income		
<10000	0	0
10000-100000	135	90
>100000	15	10
Social habits		
Smoking	18	12
Alcohol consumption	20	13.33

AREA-WISE DISTRIBUTION:

Area-wise distribution of subjects from different parts of Dakshina

Kannada(DK) district participated in the study is as follows (**Table 2**):

Table 2: Area-wise distribution of subjects (N=150)

Area (D.K. district)	No. of patient
Kankanady	39
Valachil	26
Valencia	31
Jeppu	23
Padil	31

REASONS FOR NONADHERENCE

All patients were interviewed about their possible reasons for non-adherence. There were 10 universal reasons that were included in the questionnaire and the study found that 18% of participants discontinued medications once they felt better, 12.6% were afraid of side effects, 52.6% has interruptions of daily routine which might be the most common reason for housewives and almost 63% of them forgot to take medications.

Table 3:- Reasons for Non Adherence

Reasons	No. of Patients	Percentage (%)
I don't need to take medication once I feel better	27	18
I am afraid of side effects	19	12.6
Influence of environment	6	4
I forget to take my medication	94	62.6
I dislike my current medication	13	8.6
Too many medications to take	5	3.3
Being away on weekend/vacation	55	36.6
Drug out of supply	40	26.6
Expenses (doctors' fees, transport, medicine, and hospitalization)	8	5.3
Interruptions of daily routine	79	52.6

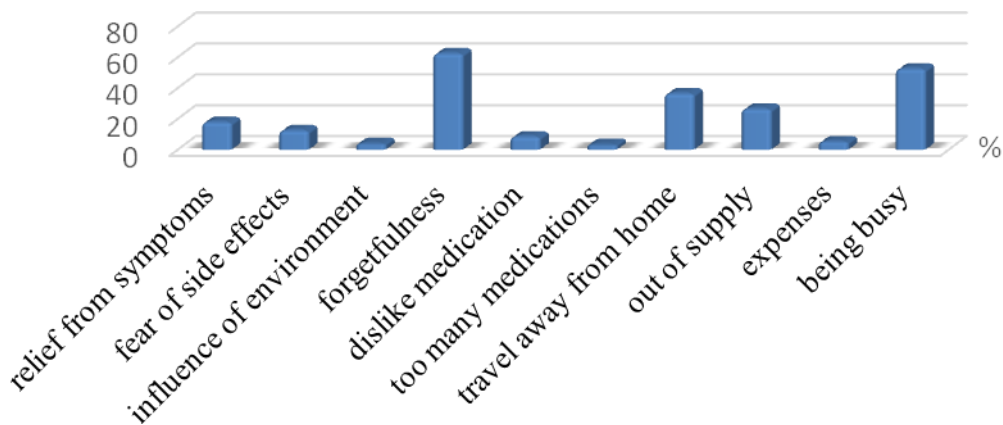


Figure .1 Reasons for Non-Adherence

DISCUSSION

The study was conducted among 150 patients who were under anti-hypertensive

therapy. Inclusion of each patient's demographic characteristics was mandatory: 45.3% males and 54.6% females

participated in the study. Gender is found to be general barrier for adherence in many studies but gender has no much significance in medication adherence according to our study. The gender wise distribution was also not equal since the majority of the population includes females. Therefore, an accurate comparative study is not possible. The result of the study shows variability. Age is also a major barrier in many studies, in our study the highest percentage of age group was 51-70 years (76.6%) followed by 71-90 years (16%) and age group of 31-50 years (7.3%). Our research suggests that age differences existed in medical adherence. Medical adherence was lower in elderly patients. In the present study, majority of the study population ages between 51 to 70 years. As people grow older, they tend to experience physiological changes that can impair memory and lead to changes in the cognitive skills.

Education level plays major role in achieving adherence. In our study, 24% has elementary school education, 33.3% were high school pass-outs, and 42.6% were college/university graduates. Education plays a major role in overall development of the individual. Details of their education were analyzed to check the impact of education on adherence. Subjects who have gone to college / university comprise majority followed by high school graduates and elementary school graduates. A real connection between education and medication adherence cannot be established but current study shows that with increasing education, job opportunities increases leading to busier lives. This could also be one of the reasons for non-adherence.

Occupation is one of the barriers because they influence a part of major time of the day in our life. A total of 17.3% were government employees, 32.6% were private employees and 50% of individuals were self-employed of which 36.6% were housewives. We have included housewives in the self-employed section of population which totals to 50%. There is a natural tendency for a woman in the house to look

after every member in the family but tend to forget the responsibility towards their own health. This could be one of the reasons why a significant increase in the adherence to medication is not possible among housewives. This can probably be increased by providing more convenient medication adherence devices such as pillboxes, SMS reminders and smart pill bottles.

The affordability of medicines is also one of the main factors for medication non-adherence. The annual income of 90% of the study population ranges from 10,000 to 1,00,000. According to our study, only a negligible population of subjects has affirmed medication expenses as the reason for non-adherence. Although this cannot be rightly correlated but it can definitely be one of the reasons for non-adherence. This problem can be resolved by the entry of generic drugs into the market that is generally sold at much lower prices than the original branded product.

The social habits of the population revealed that 13.3% of the populations were alcoholics and 12% were smokers. Study population does not include much alcoholics or smokers and hence the correlation cannot be analyzed. But on a general basis, the combination of such social habits and reduced annual income could indirectly be one of the reasons for non-adherence to medications.

CONCLUSION

Adherence to antihypertensive medications is a key component to control blood pressure levels. Findings from the study can set the stage for future studies to address the causal relation between adherence and health outcomes, but, more importantly, quantify for patients and providers how important it is to take drugs of proved efficacy as prescribed. There is a greater role for pharmacists; Patient's personal connection with a pharmacist could serve as top predictors of medication adherence.

FUTURE PROSPECTIVE

Further studies should be done in higher number of population to get more significant data on medication adherence practice among patients with hypertension. Our findings set the stage for future studies to address the causal relation between adherence and health outcomes, but, more importantly, quantify for patients and providers how important it is to take drugs of proved efficacy as prescribed.

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