



LEVEL OF TREATMENT ADHERENCE AND IT'S ASSOCIATED FACTORS AMONG HYPERTENSIVE PATIENTS IN A TERTIARY CARE CENTER, SMS HOSPITAL, JAIPUR: A CROSS SECTIONAL STUDY

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ABSTRACT

Background Poor adherence among patients increases load on health care facilities as this increases complications in patients and more of health care personal and infrastructure is required for their management. Taking antihypertensive medications properly is a central point in the management of hypertension. **Objective:** To assess level of Treatment Adherence and it's associated factors among Hypertensive patients in a tertiary care center, SMS Hospital, Jaipur. **Material and Methods:** Observational cross-sectional study was conducted among 304 Hypertensive patients recruited from OPD using MMAS-8 scale. **Results:** Out of total 304 enrolled in study 65% were female. The age of patients was between 35 to 70 years. 35% had high, 44% had medium and 21% had low level of Treatment Adherence. **Conclusion:** Increasing age, longer duration of treatment, and higher education level were significantly associated with higher Treatment Adherence. Health care providers should pay due attention to the importance of adherence and the influencing factors of adherence.

KEYWORDS : Hypertension, Treatment Adherence, MMAS-8

INTRODUCTION

Hypertension is one of the most serious health problems all over the world and is a significant risk factor for many diseases that is a substantial cause of morbidity and mortality. It affects multiple body systems and increases the risk of cardiovascular events such as myocardial infarction, stroke, heart failure, renal dysfunction, and increased mortality risk.

1.13 billion people worldwide have hypertension, mainly (67%) living in low- and middle-income countries (WHO). HTN prevalence in India is 29.8 %. It varies from 27.6 % to 33.8 % in rural and urban settings.¹

Taking antihypertensive medications properly is a central point in the management of hypertension. Effective antihypertensive treatment should be maintained indefinitely to reduce the relative risk of stroke and other cardiovascular disease events.²

Medication adherence has been defined by the International Society for Pharmacoeconomics and Outcomes Research as the "extent to which a patient acts in accordance with the prescribed interval and dose of a dosing regimen".³

However, due to the asymptomatic nature of the disease and indefinite treatment duration, medication adherence remains a significant challenge among these patients.⁴

Poor adherence is the most significant cause of uncontrolled BP and estimates that 50–70% of people do not take their antihypertensive medication as prescribed.⁵

Many factors contribute to the poor control status in patients with NCD which includes lack of integrated care at health system level, poor adherence to self-care recommendations, and compliance to medications. Among these factors, medication nonadherence is one of the most common and potentially modifiable causes of inadequate control of the NCDs. Poor medication adherence results in increased out-of-pocket expenditure due to outpatient care, emergency visits, and hospitalization for management of complications due to uncontrolled status.⁶

There are various factors that affect a hypertensive patient's behavior regarding adherence to antihypertensive treatment.

Knowledge about hypertension and its treatment, socio-demographics, beliefs about treatment, patient-provider relationship and the support received from healthcare services are the factors that affect hypertensive patient's adherence.⁷ Identifying factors that affect medication adherence is the first step towards improving adherence.⁸

Poor adherence among patients increases load on health care facilities too as this increase's complications in patients and more of health care personal and infrastructure is required for their management. There is also paucity of literature on Treatment Adherence among patients of hypertension in Rajasthan. Study will help in identifying Treatment Adherence among patients of hypertension so that health promotion program can be strengthened, and motivational programs can be administered at family, community and government level.

Current study is an attempt to assess level of Treatment Adherence and its associated factors among patients of hypertension and also to serve as reference for future research.

OBJECTIVES

- To assess level of Treatment Adherence among Hypertensive patients in a tertiary care center, SMS Hospital, Jaipur
- To find out factors associated with Treatment Adherence among Hypertensive patients in a tertiary care center, SMS Hospital, Jaipur

METHODS

Study Area: SMS Hospital, Jaipur

Study Type and Design: Observational type of Cross-Sectional Study

Study Period: April 2023 to June 2023

Study Population: Hypertensive patients attending OPD, SMS Hospital, Jaipur

Sample size: A sample size of 304 was taken considering Treatment Adherence in 74.1% patients at 95% confidence level and 5% absolute allowable error.⁹

Study subject recruitment: Patients diagnosed with Hypertension and taking treatment for duration of ≥ 1 year for the same were recruited from OPD of SMS Hospital, Jaipur

Study Tool: MMAS-8

MMAS-8 is pre validated tool, Morisky et al. developed an eight-item scale known as the Morisky Medication Adherence Scale (MMAS). The questions were formulated in such a way that the respondents avoid a "yes-saying" bias. The response choices consist of yes/no for questions 1 to 7 and a five-point Likert scale for the last item. The scoring is such that each "no" response is rated as "1" and the "yes" response as "0" except for question 5, which is the reverse; that is "yes" is rated as 1 and "no" as 0. For item 8 (How many times do you have difficulty remembering to take all your medications?), if the patient responds "0 or 1" the score is "1," and if response "2, 3 or 4" is chosen, the score is "0." The total score for the MMAS-8 ranges from 0 to 8. The scores are then categorized as low (<6), medium (6<8), and high (8) medication adherence.

Exclusion Criteria: Pregnant/lactating females.

RESULTS

Out of total 304 enrolled in study 65% were female. The age of patients ranges between 35 to 70 years. 80% of patients were of Hindu religion.

Out of all 304 patients 35% had high, 44% had medium and 21% had low level of Treatment Adherence.(Fig.1)

The age of patients was divided in 3 age groups: 35-50 yrs, 51-60 yrs and 61-70 yrs. Age of patients was found significantly associated with Treatment Adherence (P value ≤ 0.05). 44% patients belonging to age group of 61-70 yrs had high level of Treatment Adherence whereas among age group of 35-50 yrs only 23% had high Treatment Adherence.(Fig.2)

38% of males had high adherence whereas 33% female patients had high adherence which is slightly lower than in males but it is not significant.

36% of patients belonging to Hindu religion had high adherence whereas 30% of Muslim patients had high adherence. We found no significant association between gender and Treatment Adherence.

Out of 304 patients 139 patients belonged to nuclear family, 123 belonged to joint family and 42 had three generation family from which high adherence was present in 30%, 34% and 50% respectively. We found no significant association between type of family and Treatment Adherence.

Out of 304 patients, 16% were illiterate, 57% were school passed, 15% were graduate and 12% were postgraduates from which high Treatment Adherence was found in 25%, 31%, 47% and 50%. We found significant association between education level and Treatment Adherence, i.e., higher educated patients had high adherence.(Fig.3)

94 patients were non vegetarian and 210 were vegetarian from which low adherence was found in 32% and 16% patients respectively which was found significant. i.e. non vegetarian patients had low adherence than vegetarian patients.

Out of 304 patients, 117 had duration of hypertension <5 yrs, 145 patients had duration of 5-10 yrs and 42 patients had duration of >10 yrs from which high adherence is present in 23%, 39% and 50% which we found significantly associated. i.e. as duration of treatment increased the adherence of patients to treatment also increased. 40% patients had other chronic disease along with hypertension mainly of diabetes and thyroid disorder.

Table 1 Characteristics of study participants in a/w level of Treatment Adherence

		High	Medium	Low	P value (≤ 0.5)
Overall Treatment Compliance		35%	44%	21%	
Age	35-50 yrs (90)	23%	47%	30%	0.00
	51-60 yrs (112)	35%	38%	27%	
	51-60 yrs (112)	44%	50%	6%	
Gender	Female (200)	33%	48%	19%	0.28
	Male (104)	38%	38%	24%	
Religion	Hindu (243)	36%	42%	22%	0.14
	Muslim (61)	30%	55%	15%	
Family	Nuclear (139)	30%	46%	24%	0.08
	Joint (123)	34%	44%	22%	
	3 Gen (42)	50%	43%	7%	
Education	Illiterate (48)	25%	56%	19%	0.04
	School (175)	31%	47%	22%	
	Graduate (45)	47%	40%	13%	
	Post Graduate (36)	50%	25%	25%	
Diet	Nonveg (94)	36%	32%	32%	0.002
	Veg (210)	34%	50%	16%	
Duration	<5 yrs (117)	23%	54%	23%	0.011
	5-10 yrs (145)	39%	40%	21%	
	>10 yrs (42)	50%	36%	14%	
Other chronic disease	Present (123)	39%	46%	15%	0.087
	Absent (181)	32%	43%	25%	

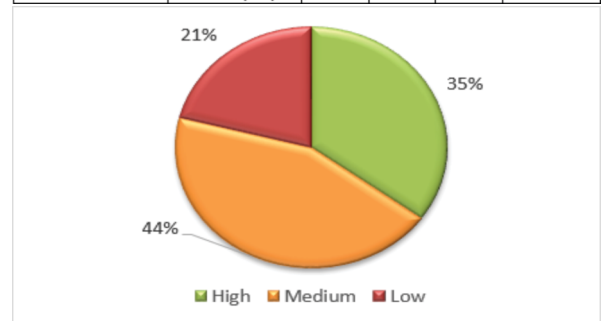


Figure 1 Level of Treatment adherence among Hypertensive patients

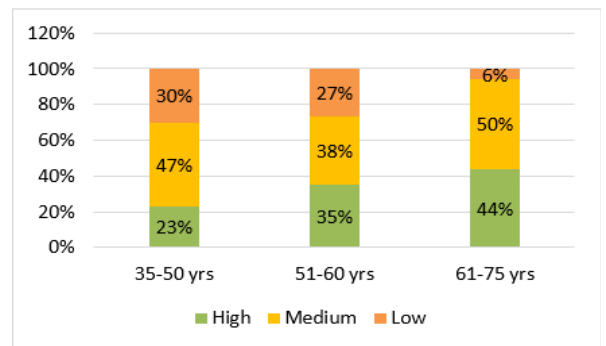


Figure 2 Treatment Adherence in Hypertension patients according to age

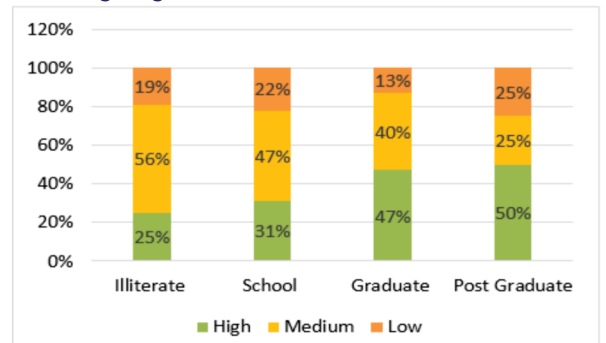


Figure 3 Treatment Adherence in Hypertensive patients according to level of education

DISCUSSION

Hypertension has become a common global public health

problem due to an increasingly aging population. Many people are at risk of stroke and cardiovascular disease who are non-compliance to antihypertensive treatment.¹⁰ Our study revealed that 35% patients had high adherence, 44% had medium and 21% had low adherence to antihypertensive treatment whereas other studies from Malasia and Gambia showed adherence in 44% and 27% of patients.^{11,12}

We studied various factors which might be associated with Treatment Adherence like age, gender, religion, family, education level, diet type (veg or non veg), duration of treatment and presence of other chronic diseases. Out of these, only age, education level, diet type and duration of treatment were found significantly associated with treatment adherence.

In present study we didn't find any significant association between gender and Treatment Adherence which is consistent with a study done in AIIMS Rajasthan.¹³ Higher educated patients had higher Treatment Adherence in our study which might be due to reason that higher educated patients have higher knowledge and awareness about their disease. In our study, patients with increasing age had higher Treatment Adherence which is consistent with a study done in South India which can be explained by the reason that older patients tend to more concerned about their health and also they get help from family members.¹⁴

In our study we didn't find significant association between comorbidity and Treatment Adherence whereas a study showed that comorbid patients had higher adherence to treatment.¹⁵ In our study longer duration of treatment is associated with higher compliance which is similar to findings of a study done by Bhandari et al.¹⁶ Patients who were non vegetarian had more low Treatment Adherence.

Strength And Limitations

The strength of the present study is that it assessed most of the associated factors and has a good sample size. Our study has few limitations like no follow up of patients and single center-based study, this could limit the generalization of this study.

CONCLUSIONS

Our study concluded that only 1/3rd of patients had high Treatment Adherence. Increasing age, longer duration of treatment, and higher education level were significantly associated with higher Treatment Adherence. Non vegetarian diet was associated with low adherence. Gender, religion, type of family and other chronic illness was not found significantly associated with adherence.

Recommendation

Health care providers should pay due attention to the importance of adherence and the factors influencing adherence e.g. involvement of patients in self-monitoring of blood pressure.

There is also need for more studies focusing on the behavior and perception of the population regarding adherence to treatment.

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