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Hypertensive Patient at Primary Care Hospital: An Assessment of Medication Adherence and Its Risk Factors

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Background: Medication adherence is a crucial factor in the management of hypertension, influencing both treatment outcomes and the prevention of complications. Despite the availability of effective antihypertensive medications, non-adherence remains a significant challenge. This study aims to assess medication adherence and identify its associated risk factors among hypertensive patients attending a primary care hospital.

Methods: A prospective observational study was designed over 6 moths periods involving hypertensive patients aged 18 or more than 18 years. A total of 105 participants were selected to assess medication adherence among hypertensive patients, by using a The Morisky Medication Adherence Scale (MMAS-8) and to assess the modifiable and non modifiable risk factors of hypertension among the hypertensive patients . Sociodemographic data, clinical characteristics, and potential risk factors for non-adherence were collected through structured interviews and medical records .

Result: adherence poses significant obstacle not only treating hypertensions but also in managing all chronic requiring long term medications . Failure to adhere to antihypertensive treatment inevitably leads to uncontrolled hypertension . Multivariate analysis revealed that patients who were younger , lack of knowledge , lack of physical exercise ,poor diet , socioeconomic data , and reported financial difficulties were more likely to exhibit poor adherence .

Conclusion : Educate patients about the importance of medication in maintain balance levels of systolic and diastolic pressure, and proper patient counselling is needed to the patients who ae non adherent to medication . patients are non adherent to medication due to long duration of therapy.

Keywords: Medication adherence, non modifiable, MMAS-8

INTRODUCTION

There is no scientific definition for the term hypertension. This is mostly because it is linked to rising blood pressure. As a result, identifying a patient's normotension or hypertension might be difficult.

Higher bp systolic pressure and diastolic pressure, are linked to a higher risk of cardiovascular disease. Therefore, while defining hypertension, it is appropriate to consider both the diastolic pressure and systolic pressure bp parameters. A number of treatment trials for mild hypertension have found a stronger correlation between cardiovascular events and reached systolic levels than with diastolic values.

Primary (or essential) hypertension and secondary hypertension are the two forms of high blood pressure. Between 90 and 95 percent of cases are primary, meaning that they include excessive blood pressure. caused by a generic lifestyle and hereditary factors. Excessive intake of salt in the diet, being overweight, smoking, not exercising, and drinking alcohol are lifestyle factors that raise the risk.

Hypertension is a positive prognosis indication and is related with a good outcome, several investigations have demonstrated that exercise hypertension has an independent, negative impact on outcome. Exercise-induced hypertension may be a precursor to resting-state hypertension and subsequent hypertensive left ventricular hypertrophy. Diagnostic stress test results confirm that a high rate-pressure product is often linked to a hypertensive Patients with hypertension have been assessed using a variety of diagnostic techniques when they are under pharmacological and physical stress. While some prognostic studies have demonstrated that exercise response to exercise in hypertensives. According to Doppler tissue imaging measurement of myocardial contractility, patients with hypertension have elevated ventricular contractility and a high rate-pressure product. Additionally, myocardial function is hyperdynamic under pharmacological stress.

MEDICATION ADHERENCE

"The degree which a patient's medication-taking practices align with established guidelines from a medical professional "is intended by the term "medication adherence". In order to achieve blood pressure regulation, it is crucial. Individuals who followed their hypertension treatment plan to the letter were frequently much less likely to experience increased blood pressure.

Inattention to medication is common. particularly when treating chronic illnesses like hypertension, which results in ill health results and high medical costs due to drug-related comorbidity. According to the WHO, in developed nations, the average medication adherence rate for long term conditions is just approximately 50%. Due to limited access to treatments, it is said that the issue is worse in poorer nations. The issue of nonadherence in hypertension is made worse by the condition's nonspecific character."

Medication is the key to controlling elevated most patients typically show adequate bp levels despite, complexity of controlling it. The consequences of hypertension are lessened by medication. According to studies, taking medication lowers a patient's death rate by 46%. Many individuals refuse to take their prescribed medications as directed. According to study data, only 21% of patients adhered to their regimens of medication by more than 80%.

The National Association of American Nurses recognized the nursing diagnostic of inadequate adherence to drug regimen. Regrettably, widespread noncompliance with medication regimens Due to associated with drugs morbidity, this fact results in worse health outcomes and greater expenses for healthcare.

Adherence to medication is linked to a strong sense of need and therapy for anxiety. In nursing practice, it's critical to comprehend the particular obstacles to adherence and include patients in putting improved adherence techniques into action.

RISK FACTORS

MODIFIABLE	NOT MODIFIABLE
Increased systolic blood pressure	Age
Increased diastolic blood pressure	Gender
Tobacco consumption	Obesity
Increased total and low-density lipoprotein	History premature cardiovascular diseases
cholesterol	Hyperglycaemia

MATERIALS AND METHODS

Study design and study period

The study was prospective observational study and study was conducted for a period of time of 6 months from June 2023 – December 2023.

Inclusion and exclusion criteria

Patients 18 or over 18 years of age , both male and female , with a conformed diagnosis of hypertension and taking at least one medicine to treat hypertension were included. out patients of general medicine department were included.

The study didn't include patients with pregnant and lactating . patients with paediatrics and phychiatrics were excluded. Use of other drugs that can increase bp were excluded in the study .

Source of data

The patient's data collection form is used to collect the patient details were evaluated such as demographic details, prescription charts, medical records, doctor notes, progress notes, patient medical records, BMI, Social status, risk factors modifiable non modifiable, education, domiciliary status, co-morbidities, Duration of hypertension, physical activity, medication history, and Morisky modified medication adherence scales (MMAS).

Plan of study

The Morisky Medication Adherence Scale (MMAS) Questionnaire is used measure among the selected patients to access the medication compliance and non-compliance score in the hypertensive patients.

Informed consent was obtained from all the subjects participating in this study.

In this study carried out 100 respondents were randomly selected from diagnosed hypertension she attended the outpatient department, the main goal was to determine the anti-hypertensive medication regimens among hypertensive patients**.**

Adherence to Anti-hypertensive drugs.

The Morisky Medication Adherence Scale (MMAS) is a highly acceptable method for patients 10 self-report medication adherence.

It has a high degree of validity and reliability in participants with hypertension and other chronic diseases. this scale was chosen to determine the level of compliance with antihypertensive drugs.

A standard survey form was used to collect data from the participants regarding patient medication adherence.

Everyone who engaged had consented in writing prior to the interview session.
The Modified Morisky Medication Adherence Scale made up of 7 questions.
The questionary required patient to set their response form the list of possible answers to simplifying administration and reduce in consistencies among interviewers.
A four-point Likert type response format was used for each question in the new medication adherence scale.
There were score was each response –
NONE OF THE TIME -4
SOME OF THE TIME =3
MOST OF THE TIME =2
ALL THE TIME -1
Each the patient total score added. Each patient can have total a score that range from 7 (minimum)-28(maximum).
Poorer adherence the medication therapy would be reflected by lower score.
Adherence was characterised as a total score of 28 or a score of 27 (resulting from the subtraction of I point from either of the "unintentional adherence" questions, which were questions | or 6). A score of 26 or lower was considered nonadherence.

RESULT

There were 105 responders are in the trial. Result based upon the Demographic details, Education, Occupation, Domiciliary status, Diet, BMI, Social status, Risk factors (Modifiable and non Modifiable) , Co – Morbidities, duration of hypertension and Physical activity.

- Hypertensive patients were categorised based on their age, from above results we observed that 41-60 (54.28%) age group were subjected to Hypertension**.**

- A total of 105 participants that were collected randomly and categorised based on gender from above results we observed that males 60 (57.14%) were subjected to hypertension.

- A total of 105 participants that were collected randomly and categorised based on education, from above results we observed that Illiterates.

- A total of 105 participants that were collected randomly and categorised based on occupation from above results we observed that unemployed 30(28.57%) were subjected to hypertension.

- A total of 105 participants that were collected randomly and categorised based on domiciliary status from above results we observed that rural people 77(73.33%) were subjected to hypertension due to lack of awareness.

- A total of 105 participants that were collected randomly and categorised based on diet from above results we observed that mixed diet 91 (86.67%) were observed to hypertension due to high co-morbidities which lead to chronic diseases.

- A total of 105 participants that were collected randomly and categorised based on BMI from above results we observed that obese patients 36 (34.28%) were subjected to hypertension due to lack of physical exercise and mixed diet.

- a total of 105 participants that were collected randomly and categorised based on duration of hypertension from above results we observed that 2-10 were high.

- A total of 105 participants that were collected randomly and categorised based on physical activity from above results we observed that there is no physical activity is seen in most of the patients (63.8%) were subjected to hypertension.

- a total of 105 participants that were collected randomly and categorised based on alcohol consumption from above results we observed that alcohol consumption 49 (46.6%) was also a cause to hypertension.

- a total of 105 participants that were collected randomly and categorised based on smoking from above results we observed that 36 (34.28%) was also a cause of hypertension.

- A total of 105 participants that were collected randomly and categorised based on comorbidities from above results we observed that the people with past history of diabetes mellitus 27 (25.7%) are high prone to hypertension.

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n=105			
MODIFIABLE RISK FACTORS (59)		**NON MODIFIABLE RISK FACTORS(46)**	
STRESS	**33**	**AGE (>40 Males and Females)**	**18**
SMOKING	19	GENETICS	28
OBESITY	07		

We observed that the modifiable risk factors are 59 subjects with risk factors like stress, smoking, obesity and non modifiable risk are 46 subjects with risk factors like Age and genetics.

ADHERENCE SCORE

Medication Adherence scale questions	Adherence scores 1	2	3	4	Mean score
1.How often do you forget to take your medicine?	18(17.14)	11(10.47)	22(20.95)	54(51.42)	3.066
.2. How often do you decide not to take your medicine?	13(12.38)	14(13.33)	39(37.14)	39(37.14)	2.990
3.How often do you miss taking your medicine because you feel better?	12(11.42)	26(24.76)	29(27.61)	39(51.42)	2.923
4.How often do you decide to take less of your medicine?	21(20.0)	15(10.47)	31(29.52)	38(51.42)	2.819
5.How often do you stop taking your medicine because you feel sick due to effects of the medicine?	14(13.33)	13(14.28)	24(22.85)	54(51.42)	3.123
6.How often do you forget to bring along your medicine when you travel away from home?	12(11.42)	16(12.38)	34(32.38)	43(51.42)	3.028
7.How often do you NOT take you medicine because you run out of them at home?	10(9.52)	16(15.23)	32(30.47)	47(44.7)	3.104

DISTRIBUION OF ADHRERENCE AND NON ADHERENTS RISK FACTORS

Distribution of adherents and non- adherents frequencies			
Adherence scores	adherence status	n=105	Percentage(%)
Full score (28)	Adherers	13	12.3
27	Adherers	05	4.761
23-26	non- Adherers	28	26.6
19-22	non- Adherers	21	20
7-18	non - Adherers	38	36.19

DISCUSSION

❖ Adherence poses a significant obstacle not only in treating hypertension but also in managing all chronic conditions requiring long-term medication. Failure to adhere to antihypertensive treatment inevitably leads to uncontrolled hypertension. The key to achieving desired clinical outcomes lies in medication adherence. The study revealed a predominant male presence (57.2%), with patients aged 18 to 95 years (mean age: 57.9).

❖ Approximately 26.7% had hypertension for less than 5 years, while an equal percentage had it for over 10 years. A notable 36.1% were overweight (BMI > 24.9).

❖ And also observed that illiterates 37(35.23%) , Based on occupation unemployed 30(28.57%) based on diet mixed diet patients 82 (78.09%), based on risk-factors stress was leading cause 33(31.42%) , due to lack of physical exercise patients more prone to uncontrolled hypertension .Non-adherence to hypertension medication emerged as the primary reason for uncontrolled blood pressure, with adherence estimates(mean adherent score) 17.1% using MMAS. Poor knowledge about complications of uncontrolled hypertension independently contributed to adherence issues. The average mean score of 21.066 in our study indicated non-adherence, despite most patients receiving regular medication advice from their doctors.

CONCLUSION

❖ The overall mean score of patients were observed as 21.066 (75.2%).

❖ This data suggests that the patients who are non-adherent may be a result of

- May be poor communication with the doctor
- May be long duration of therapy
- May be lack of knowledge on the medications.
- May be due to illiterate,
- May be due to the stress patients are non adherent to medication.

❖ Research done on patients and education about medication and maintaining balanced levels of systolic and diastolic pressure, and proper patient counselling may be helpful for patient who are non-adherent to medications