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ANTI-HYPERTENSIVE TREATMENT COMPLIANCE AND ADHERENCE IN HYPERTENSIVE PATIENTS- A MULTICENTRE CROSS SECTIONAL STUDY OF THREE TERTIARY CARE HOSPITALS OF PUNJAB, PAKISTAN

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Abstract:
Objective: *To determine that factors that affect compliance and adherence to medicationsundergoing hypertensive treatment in hypertensive patients.*
Design: *Descriptive type of cross sectional*
Place and duration of study: *It took the 8 months starting from 2 August 2017 to 29 March 2018 in Lahore General Hospital, Mayo Hospital Lahore and DHQ Layyah*
Subjects and Methods: *Purposive sample 165 ward patients with questionnaire on sociodemographic and compliance and adherence were filled.*
Results and conclusion: *Major causes of non-adherent nature were expensive medications, lack of symptoms, lack of money, forgetfulness, lack of awareness due to poor educational status and irregularity in drugs consumptions due to non-serious attitude to the potential harms of the disease.*
Keywords: *Compliance, adherence, medications, forgetfulness*

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INTRODUCTION:

American Heart Association (AHA) and American College of Cardiology (ACC) defined the new lower readings of hypertension. They considered blood pressure in normal range if Systolic blood pressure/Diastolic blood pressureshould be lower than 120/80 mm Hg; for increased blood pressure, SBP between 120-129 mmHg and DBP lower than 80 mmHg; for hypertension stage-1,SBP should be less than 130-139 mmHg with DBP between 80-89 mmHg; for hypertension stage-2, systolic BP equal to or above 140 mmHg with diastolic BP as 90 mm Hg [1].WHO exposed in its report in Geneva,2013 that elevated blood pressure was found to be a major culprit in causing 7.5 million deaths throughout the world, so rightly considered as a "Silent Killer" [2,3].

Medication adherence is the other name of extent to which the behavior of a patient of medication-takingcoincides with recommendations from a health care provider. [4] It is a major and important factor for controlling disease.Our research focuses on asking essential questions to develop understanding by the patients about their own condition and health beliefs. So, in improving their behavior to medications.A cluster randomized controlled trial documented that reduction in blood pressure due to higher compliance and better adherence to lifestyle recommendations. [5]

A recent meta-analysis of 94 studies in Netherland documented in that concerns about the side effects of drugs, loss of sexual activities performance, or better effects of traditional remedies must be cleared by health care provider in order to increase adherence to antihypertensive medication.[6]

In a Malaysian study, carried out in a primary care in the district of Melaka Tengah, it was found that 56% of the 464 sampled patients taking antihypertensives medications. [7] In another study 51.3% of patients interviewed had poor adherence to prescribed hypertensive medications. [8]

A cohort study among hypertensive patients showed that factors compromising the rates of adherence included duration of hypertension. Much higher rates and better adherence in hypertensive patients had been reported with shorter and preciseduration of drugs taking. Adherence was also affected by the use ofsome advanced and new agents including angiotensin-converting enzyme (ACE) inhibitors, calcium antagonists, and thiazide diuretics. [9]

MATERIALS AND METHODS

The study was conducted from 2 August 2017 to 29 March 2018 in Lahore General Hospital, Mayo Hospital Lahore and DHQ Layyah. This was a Cross sectional survey. Sample was collected by non-probability way.

There were 165 patients of either sex included in this study of both gender having age above 18 years to medical ward.

A standardized questionnaire on sociodemographic status including name, gender, marital status, age, education, medications, blood pressure charting, supplements, regularity, forgetfulness and lack of money and symptoms.

Systolic and Diastolic blood pressure was measured by the research participants. Information was collected, and data was entered in SPSS version 20. It is a descriptive study so there is no need to apply any test. Frequencies and percentages are calculated for qualitative variables gender, marital status, education, medications, BP charting, supplements, regularity, forgetfulness and lack of money and symptoms.

INCLUSION CRITERIA:

Hypertensive patients of both genders taking oral medication for 3 months having age 18 years or above.

Exclusion criteria:

All the patients of hypothalamic-pituitary-adrenal axis dysfunction or other pituitary or adrenal tumors were excluded from study.

RESULTS:

A total of 165 ward patients were included in this study of Compliance and adherence to treatment in hypertensive patients. Age ranges from 18 to 80 years.

Among 165 patients, male was 89{53.9%} and female 76{46.1%}. 138{83.6%} married 27{16.4%} unmarried. Patient whom used to do BP charting 13{7.9%} and those without BP charting 152{92.1%}**(Pie chart 1)**. And this result is congruent to an American nursing practioners study. [10]Those who have taken medication 37{22.4%} and those who have not taken medication 128{77.6%}**(Pie chart 2)**. Those who were regular in their medication 20{12.1%} and those who were not regular 145{87.9%}**(Pie chart 3)**. These above-mentioned results are correspondent to the Malaysian study. [11] Those who forgot to take the medication 78{47.3%} and those who did not forget 87{52.7%} **(Pie chart 4)**.. Lack of money 34{20.6%} and who did not have lack of money 131{79.4%} **(Pie chart 5)**.Lack of symptoms were in 32{19.4%} and with

symptoms 133{80.6%} **(Pie chart 6)**and these results matched to a Chinese study. [12]. Most commonly prescribed classes of antihypertensive drugs included Loop Diuretics, Beta Blockers, ACE (Angiotensin Converting Enzyme) Inhibitors, Thiazide Diuretics, Calcium Channel Blockers and Angiotensin-II Receptors Blockers by the healthcare staff of Lahore General Hospital, Mayo Hospital Lahore and DHQ Layyah. **(Table 1)**

DISCUSSION:

Uncontrolled blood pressure in chronic hypertensive patients can cause serious life-threatening results and consequences like higher incidence of mortality and morbidity. It also causes a great economic burden to the health care sector and national health budget. Compliance and adherence to antihypertensive prescribed drugs are important factor that can affect blood pressure control drastically. A much higher level of improvement occursin blood pressure control with a small improvement in adherence. The awareness and intervention programs should be planned for the betterment of non-adherent nature and behavior of the patients. In this current study, we made some efforts to identify the reasons for nonadherence and then, suggesting few steps to be taken to improve it, through a better connection and communication between health care staff and hypertensive patients.

In our study, major cause of non-compliance among the patients was forgetfulness nature of patients. The cost of medication is another factor to compromise the adherence and thus, for efforts to control BP. The poor patients were less likely to adhere to the prescribed expensive medications due to their unaffordability to purchase drugs regularly to the families with poor sociodemographic status with no permanent sources of income and our study results are in correspondence to the Malaysian study [11].

Other causes of compromised compliance to treatment were found to be the irregularity in consumption of medication, lack of symptoms and use of other non-prescribed drugs. Similarly, BP Charting can be beneficial in blood pressure control in helping them to be compliant, adherent and regular in consumptions of medications as recommended by the American Heart Association (AHA) [12].

Our study also revealed that most of the physicians do prescribe the medications by the pharmaceutical trademark name rather than their generic and class name. Most commonly prescribed antihypertensive drugs were by their classic and generic names included Loop Diuretics, Beta Blockers, Thiazide Diuretics, Calcium Channel Blockers ,Angiotensin-II Receptors Blockers, ACE (Angiotensin Converting Enzyme) Inhibitors by the healthcare staff of Lahore General Hospital, Mayo Hospital Lahore and DHQ Layyah.

CONCLUSION:

Major causes of non-adherent nature were expensive medications, lack of symptoms, lack of money, forgetfulness, lack of awareness due to poor educational status and irregularity in drugs consumptions due to non-serious attitude to the potential harms of the disease. Only 7.88% used to perform BP Charting to manage their blood pressure.

SUGGESTIONS:

Large number of steps must be taken by health care professionals through counseling sessions to help patients organize their medication consumption. This could be achieved by planning for medication intake to correspond with certain activities,such as five prayers a day particularly asking them to take medication after offering Fajir and Isha prayer, with eating meals, or by setting alarms to go off at medicine-taking time during the initial stages of their therapy.

LIMITATIONS

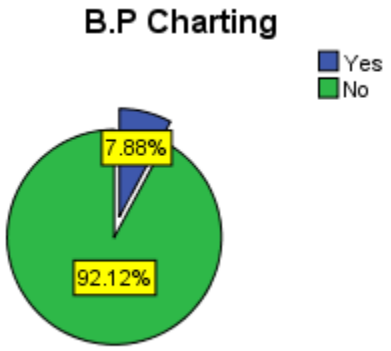
First, the study design was way simple infer a fully reliable correlation that was descriptive type of cross-sectional study.

Second, as we only recruited ward patients aged above 18 years old, some selection bias might confound the results.

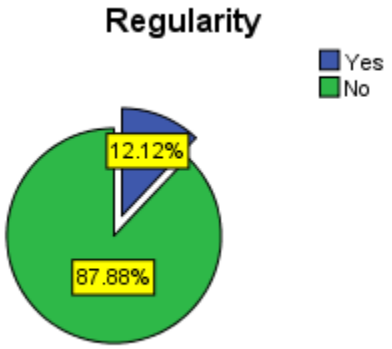
(Table 1). Table Showing Count and Row N % of Different Variables:

Gender	Male	Count	89
		Row N %	53.9%
	Female	Count	76
		Row N %	46.1%
Education	No Formal Education	Count	110
		Row N %	66.7%
	1-8 Years	Count	22
		Row N %	13.3%
	9+ Years	Count	33
		Row N %	20.0%
Marital Status	Married	Count	138
		Row N %	83.6%
	Unmarried	Count	27
		Row N %	16.4%
Age	18-39 Years	Count	51
		Row N %	30.9%
	40-59 Years	Count	59
		Row N %	35.8%
	60+ Years	Count	55
		Row N %	33.3%
Medication Information	No Medication	Count	0
		Row N %	0.0%
	Loop Diuretics	Count	31
		Row N %	18.8%
	Beta Blockers	Count	28
		Row N %	17.0%
	ACE Inhibitors	Count	8
		Row N %	4.8%
	Thiazide Diuretics	Count	44
		Row N %	26.7%
	Calcium Channel Blockers	Count	11
		Row N %	6.7%
	Angiotensin-II Receptors Blockers	Count	43
		Row N %	26.1%
B.P Charting	Yes	Count	13
		Row N %	7.9%
	No	Count	152
		Row N %	92.1%
Non-Prescription Medication/Supplements	Yes	Count	37
		Row N %	22.4%
	No	Count	128
		Row N %	77.6%
Regularity	Yes	Count	20
		Row N %	12.1%
	No	Count	145
		Row N %	87.9%
Forgetfulness	Yes	Count	78
		Row N %	47.3%
	No	Count	87
		Row N %	52.7%
Lack of Money	Yes	Count	34
		Row N %	20.6%
	No	Count	131
		Row N %	79.4%
Lack of Symptoms	Yes	Count	32
		Row N %	19.4%
	No	Count	133
		Row N %	80.6%

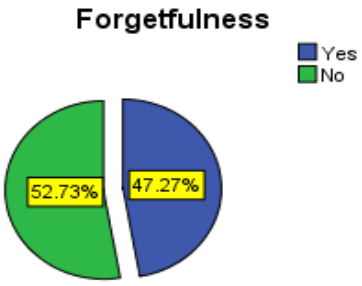
Pie chart 1: Frequencies and number of patients showing their habit of BP Charting



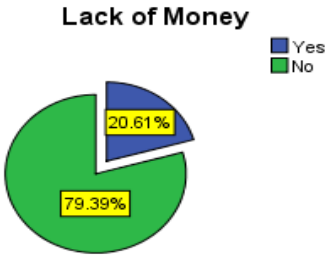
Pie chart 2: Frequencies and number of patients showing their regularity.



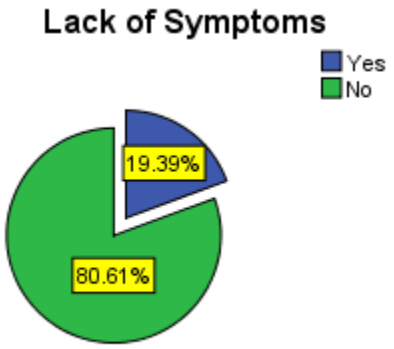
Pie chart 3: Frequencies and number of patients showing the effect of forfetfulness.



Pie chart 4: Frequencies and number of patients showing the effect of lack of money



Pie chart 5: Frequencies and number of patients showing lack of symptoms



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