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Research Article

ASSESSMENT OF MEDICATION ADHERENCE AMONG HYPERTENSIVE PATIENTS BY USING HILL-BONE COMPLIANCE SCALE IN TERTIARY CARE HOSPITALS QUETTA

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Abstract:

Adherence to a drug regimen is usually defined as the extent to which patients take medication as directed by a physician. Adherence to prescription drug regimens is difficult for all patients and is especially challenging for the elderly. Adherence to medication requires a working relationship between a patient or caregiver and a physician who prescribes should be open and honest with regard to medications., i.e. the administration schedule, intended benefits, adverse effects, and costs. Therefore, this study aimed to assess the level of adherence of hypertensive patients in Quetta, by using MMAS-8 and Hill-Bone Compliance Scale. A Cross-sectional descriptive study was conducted in Sandeman Provincial Hospital and Bolan Medical Complex to assess the adherence among hypertensive patients of Quetta, Pakistan. The study has been conducted from start to end was from March 2016 to October 2016. convenience sampling technique was used to collect data. Those patients who were willing to participate and were suffering from hypertension and receiving medical treatment were included in the study. Hill bone compliance scale was used to assess the level of medication adherence. SPSS V 20 used for descriptive and inferential statistics. Respondents mean age was 45.1 years while the minimum age was 21 and maximum were 95. The MMAS-8 mean score of adherence in hypertensive patients was 3.55. and the median score was 3.0. Among 401 majorities of patients, 306 (76.6%) poorly adhered. Ninety-four (23.4%) were had moderate adherence. While only one (0.2%) were having good adherence. The mean score of hill bone compliance Scale in hypertensive patients was 24.16. and the median score was 25.0. 336 (83.4%) had imperfect adherence and 65 (16.2%) have perfect adherence. It is concluded that chronic conditions, particularly hypertension the non-adherence to treatment are one of the major contributing factors to poor management and control of hypertension. So, for better management of Hypertension patients need to be advised or consultation should be given with a special focus on medication adherence so better therapeutic outcomes will be obtained.

Keywords: Medication adherence, Hypertensive patients, Hill- bone compliance scale,

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INTRODUCTION:

Introduction

"Adherence to (or compliance with) a medication regimen is generally defined as the extent to which patients take medications as prescribed by their healthcare providers [1]". The term "adherence" is favored by several healthcare workers, since "compliance" recommends that the patient is inactively ensuing the doctor's instructions and that the treatment proposal is not grounded on a therapeutic association or agreement established between the patient and the physician. Both terms are imperfect and uninformative descriptions of medication-taking behavior [1].

Adherence to agreed medicine schedules is problematic for patients and mainly challenging for the old one. Medicine adherence stresses a working association between a patient or caregiver and prescriber that values open, truthful conversation about medicines, i.e. the administration timetable, future aids, adverse effects and costs [2]

Though nonadherence to medicines may be communal amongst the elderly, central reasons principal to nonadherence varies among patients. Demographic features may help to recognize elderly patients who are in danger for nonadherence. Insufficient or bordering health literacy amongst the elderly is mutual and permits valuation. The amount of co-morbid circumstances and incidence of reasoning, vision and/or hearing injury may incline the elderly to nonadherence. Likewise, medicines themselves may contribute to nonadherence subordinate to adverse effects or prices. Especially worrisome is nonadherence to 'less forgiving' drugs that, when missed, may lead to an adverse event (e.g. withdrawal symptoms) or disease exacerbation [2]

Non-adherence to pharmacological treatment is documented as an important fence to the positive supervision of many chronic complaints, including hypertension [3]. Poor concordance with treatment is measured to be one of the main reasons of insufficient response to blood pressure (BP) lowering treatment in patients diagnosed with 'resistant hypertension' (up to 10%–20% of patients with high BP) [3].

Hypertension is a major worldwide apprehension and is one of the key avoidable risk influences for cardiovascular proceedings. It has an enormous worrying influence on the population's well-being, consequential in unnecessary illness and death. Hypertension alone is detained responsible for more than 5.8 % of decease internationally, loss of 11.9 % a year of life and adjusted life of 1.4 %. The

valuation, supervision, and control of hypertension still carry a great challenge for health care researchers [1]. Inside the context of hypertension managing, a quantity of features are targeted as manipulating agents but non-adherence to treatment is still counted as one of the major contributing factors to poor management and control of hypertension [4]

Studies emphasized numerous issues in non-adherence, including knowledge about hypertension by patients towards hypertension; the results are not hopeful as far as adherence to medication is concerned [4] and henceforth showed nonadherence to medication is cause for not taking optimum regulator of hypertension.

Therefore, this study aimed to assess the level of adherence of hypertensive patients in Quetta, by using MMAS-8 and Hill-Bone Compliance Scale.

METHODOLOGY:

Objective

This study aimed to assess the adherence by using Hill-Bone Compliance Scale among Hypertensive patients in Quetta Baluchistan, Pakistan.

Study design

A Cross-sectional descriptive study was conducted to assess the adherence among hypertensive patients of Quetta, Pakistan.

Study settings

Study has been conducted in Quetta city public hospitals; they include

- Sandeman Provincial Hospital
- Bolan Medical Complex

Study Duration

The time period in which this study has been conducted from start to end was from March 2016 to October 2016. While data were collected from April to June 2016.

Sampling:

Sampling Technique

In the current study, the technique used for the purpose of data collection was convenience sampling.

Sample Size

The sample size selected for the study depends upon the availability and accessibility to patients. The response rate of the study was 91% as 470 questionnaires were distributed and received 430 back. After cleaning the data sample size included in the study was 401 hypertensive patients.

Inclusion Criteria

Those patients who were willing to participate and were suffering from hypertension and receiving medical treatment.

Exclusion Criteria

Patients who cannot understand Urdu, a hospitalized and those who were not willing to participate. Afghan refugees, patients with other diseases were excluded.

Data Collection:**Study Tool****Hill-Bone Compliance Scale**

The Hill-Bone-Scale assesses patient behavior for three behavioral domains of hypertension treatment and comprises 14 questions that are summed up to subscales: 'reduced sodium intake' (three items), 'appointment keeping' (two items), and 'medication-taking' (nine items). Each item could be answered on a 4-point-scale, resulting in a score ranging from 9 (perfect adherence) to 36 points and dichotomized the responses in 'perfect adherence' (9 points) and 'imperfect adherence' (>9 points).

Data Collection

The data was collected by both methods face to face and by giving and collecting Questionnaires back.

Data Analysis:

The descriptive statistics were carried out for the demographic details. Continuous data were expressed as mean and standard deviation while categorical data were expressed as frequency and percentages. Inferential statistics (Mann Whitney and Kruskal - Wallis test) have been done for the estimation of difference and relationship among study variables. All analysis was performed using SPSS v 20.

Ethical Consideration

The study has been approved by the ethical committee of the faculty of pharmacy and health sciences, University of Baluchistan Quetta as per guideline of the National bioethical committee of Pakistan (www.pmr.org.pk/erc_guidelines). Consent form was signed prior to interview

RESULTS**Demographic Characteristics**

The demographic characteristics are shown in Table 1. Respondents mean age was 45.1 years while the minimum age was 21 and maximum was 95, among them majority 114 (28.8%) were from 41-50 years, Majority 223 (55.6%) were. Marital status showed

that maximum respondents 361 (90.0%) were married. Majority of respondents 108 (26.9%) were uneducated. Majority 178 (44.4%) were housewives. And Ethnic group showed that maximum respondents 132 (32.9 %) were Pashtun.

Table: 1: Demographic Characteristics

Category	Frequency N=401	Percentage
Age		
21 - 30 years	57	14.2
31 - 40 years	107	26.7
41 - 50 years	114	28.4
51 - 60 years	96	23.9
61 - 70 years	23	5.7
71 - 80 years	1	0.2
81 - 90 years	2	0.5
More than 90 years	1	0.2
Gender		
Male	178	44.4
Female	223	55.6
Marital status		
Married	361	90.0
Unmarried	40	10.0
Education		
Uneducated	108	26.9
Primary	45	11.2
Matric	74	18.5
Inter	58	14.5
Masters	103	25.7
Others	13	3.2
Occupation		
Unemployed	43	10.7
Housewife	178	44.4
Student	9	2.2
Govt. servant	85	21.2
Business	70	17.5
Others	16	4.0
Ethnicity		
Pashtoon	132	32.9
Baloch	103	25.7
Punjabi	90	22.4
Urdu	35	8.7
Sindhi	24	6.0
Others	17	4.2
Income		
No income	231	57.6
Less than 5000PkRs.	2	0.5
5001-10000 PkRs.	6	1.5
10001-15000 PkRs.	15	3.7
150001-20000 PkRs.	51	12.7
More than 20000 PkRs.	96	23.9

Responses to Hill-Bone Compliance Scale

The responses have been seen towards hill bone compliance Scale shown in in Table.2 the mean score of hill bone compliance Scale in hypertensive patients was 24.16. and the median score was 25.0.

Table 2: Responses to Hill Bone Compliance Scale:

Questions	None of the time	Frequently	More Frequently	Always
How often do you forget to take your HBP Medicine?	143 (35.7%)	123 (30.7%)	102 (25.4%)	33 (8.2%)
How often do you Decide not to take your HBP Medicine?	129 (32.2%)	216 (53.9%)	51 (12.7%)	5 (1.2%)
How often do you Eat Salty Food?	205 (51.1%)	161 (40.1%)	34 (8.5%)	1 (0.2%)
How often do you Shake Salt, Fondor or aromat on your food before you eat it?	129 (32.2%)	244 (60.8%)	26 (6.5%)	2 (0.5%)
How often do you eat fast food? (KFC, McDonalds, fat cook, fish and chips).	105 (26.2%)	109 (27.2%)	169 (42.1%)	18 (4.5%)
How often do you Get the next appointment before you leave the clinic?	42 (10.5%)	252 (62.8%)	82 (20.4%)	25 (6.2%)
How often do you miss scheduled appointments?	294 (73.3%)	93 (23.2%)	10 (2.5%)	4 (1.0%)
How often do you Leave the dispensary without obtaining yours prescribe pills? (due to long line, closure of the clinic, forgot).	224 (55.9%)	152 (37.9%)	17 (4.2%)	8 (2.0%)
How often do you run out of HBP Pills?	170 (42.4%)	194 (48.4%)	36 (9.0%)	1 (0.2%)
How often do you Skip your HBP medicine 1-3 Days before you go to the clinic?	233 (58.1%)	139 (34.7%)	26 (6.5%)	3 (0.7%)
How often do you mistaking your HBP pills when you feel better?	136 (33.9%)	177 (44.1%)	83 (20.7%)	5 (1.2%)
How often do you mistaking your HBP pills when you feel sick?	297 (74.1%)	96 (23.9%)	7 (1.7%)	1 (0.2%)
How often do you take someone else's HBP Pills?	333 (83.0%)	60 (15.0%)	7 (1.7%)	1 (0.2%)
How often do you mistaking your HBP pills when you careless?	131 (32.7%)	130 (32.4%)	123 (30.7%)	17 (4.2%)

Hill-Bone Compliance Scale score

The Hill-Bone-Scale assesses patient behavior for three behavioral domains of hypertension treatment and comprises 14 questions that are summed up to subscales: 'reduced sodium intake' (three items), 'appointment keeping' (two items), and 'medication-taking' (nine items). Each item could be answered on a 4-point-scale, resulting in a score ranging from 9 (perfect adherence) to 36 points and dichotomized the responses in 'perfect adherence' (9 points) and 'imperfect adherence' (>9 points) as shown in table no 4.4. 336 (83.4%) had imperfect adherence and 65 (16.2%) have perfect adherence.

Table 3: Hill Bone Compliance Scale score

Adherence	Frequency	Percent
Perfect Adherence	65	16.2
Imperfect Adherence	336	83.8

Perfect Adherence: Score = 9

Imperfect Adherence: Score > 9

Relationship between Hill-Bone Compliance score and demographic characteristics

Relationship between hill bone compliance score and the demographics was calculated, factors affecting mean score includes age having significance value of ($p < 0.001$) and marital status ($p = 0.037$), while the other demographics including; gender, education, occupation, ethnicity, and income has shown significance value > 0.05 so have no effect on adherence score as shown in table no. 4

Table 4: Relationship between Hill Bone Compliance score and demographic characteristics

Category	Frequency N=401	Mean	Standard Deviation	Significance Value
Age				
21 - 30 years	57	26.51	4.500	0.001
31 - 40 years	107	25.50	4.532	
41 - 50 years	114	24.65	5.356	
51 - 60 years	96	21.50	4.877	
61 - 70 years	23	21.57	5.115	
71 - 80 years	1	23.00	-	
81 - 90 years	2	20.00	2.828	
More than 90 years	1	17.00	-	
Gender				
Male	178	24.01	5.422	0.619
Female	223	24.29	5.041	
Marital status				
Married	361	23.97	5.219	0.037
Unmarried	40	25.93	4.827	
Education				
Uneducated	108	23.03	4.739	0.067
Primary	45	23.98	4.975	
Matric	74	24.61	5.779	
Inter	58	24.45	4.736	
Masters	103	25.08	5.630	
Others	13	23.23	3.586	
Occupation				
Unemployed	43	23.74	6.238	0.850
Housewife	178	23.92	4.977	
Student	9	25.22	3.073	
Govt. servant	85	24.16	5.358	
Business	70	24.73	5.453	
Others	16	24.94	3.958	
Ethnicity				
Pashtoon	132	23.67	4.588	0.684
Baloch	103	24.10	5.457	
Punjabi	90	24.41	5.327	
Urdu	35	24.40	5.887	
Sindhi	24	25.58	6.050	
Others	17	24.65	5.123	
Income				
No income	231	23.90	5.181	0.898
Less than 5000	2	25.50	0.707	
5000-10000	6	25.33	5.888	
10000-15000	15	25.20	4.724	
15000-20000	51	24.67	5.102	
More than 20000	96	24.26	5.462	

5 DISCUSSION:

The study exposed that hypertensive patients appearing in a hospital for treatment were all-out non-adherent to blood pressure sinking treatment which is reliable with a study where they painted non-adherence to blood pressure lowering therapy is mutual, chiefly in patients with suboptimal blood pressure control. Medicine adherence related to numerous other constraints is an imperative influence in attaining blood pressure control. Due to the asymptomatic nature of the disease, patients' adherence to their given medications is often a delinquent [3].

The amount of medication adherence in hypertension treatment might differ from study to study grounded on the study methods active, the population under study, and the meaning of adherence itself. Using self-reporting forms to quantify adherence is simple and economical but known to miscalculate adherence, since patients incline to give informally acceptable replies. Adherence to medication is continuously a material of apprehension, particularly in chronic diseases and documentation of the influences disturbing adherence since it will help to recover the treatment consequences. The general adherence to medicine in our study was below thirty percent which is consistent with the answers to this study [5]. Hypertension, actuality one the most triumphed chronic diseases is related with little and deprived adherence which is reinforced by other studies where most patients were displaying poor adherence and only minor amount display virtuous adherence [6]. It is also exposed in consequences that age and marital status is meaningfully related with the study adherence score; this is consistent with findings where Since adherence is a multi-factor spectacle, achievement or failure of therapy is not reliant on on a single factor. Other issues such as age, gender, low socioeconomic status, prescribed drugs, posology, lack of social support, poor patient-provider relationship, cost, vagueness, and occurrence of psychological problems (especially depression) should also be kept in mind and evaluated before coming to a conclusion [6]

The finding of this study was low adherence to antihypertensive medications which is very mutual, attainment of around greater than 90% in the sample studied. For a populace with an recognized diagnosis of hypertension, and already using health services, these rates designate a important delinquent given all the known problems that are connected to hypertension this is reliable with study where they have low adherence and 60% of samples poorly adhered to their medical regimen [7, 8]

Medicine is shared and new method to hypertension control and blood pressure dropping drugs are the most communal drugs that are arranged by physicians. Notwithstanding the accessibility of over than a hundred-different drug that their efficiency has proven in the treatment of hypertension, the stated rates of blood pressure control are very unsatisfactory. This is seen in this study result as respondents non adhered to their medical regimen and ultimately the control on hypertension is not reachable [5] [8].

It is showed in the study results that patients do not adhere to their medicines; physicians prescribe medicine and it is a patient obligation to obey with it to attain best hypertension control this is reliable with a study where causes of poor blood pressure control are many. Physicians' parts in making suitable treatment choices and enhancing doses of medicines prescribed are vital in safeguarding the success of treatment. Furthermore, patients' adherence to the prescribed antihypertensive medication is also an important factor [9] in achieving blood pressure targets. Thus, health professionals need to work in partnership with their patients to achieve treatment goals [8].

Hill bone compliance scale tool was also utilized in this study which show some of the respondents had perfect adherence while other imperfectly adhere to their medication regimen which is consistent with the study where they highlighted and represents the first cross-cultural assessment of the Hill-Bone Compliance to High Blood Pressure Therapy Scale, not previously analyzed in any sample. It has been conducted in an "at-risk" population, with demonstrated low compliance to hypertension treatment and poor blood pressure control [10].

Unrestrained BP can carry about many significances, together with higher rates of morbidity and mortality and produce a great financial load to the healthcare segment. Adherence to medication is a vital factor that can affect blood pressure control.

CONCLUSION:

It is concluded that level of non-adherence among non - communicable chronic disease particularly Hypertension patients was very high which is related to the suboptimal therapeutic outcome. chronic conditions, particularly hypertension the non-adherence to treatment is one of the major contributing factors to poor management and control of hypertension. So, for better management of Hypertension patients need to be advised or consultation should be given with a special focus on

medication adherence so better therapeutic outcomes will be obtained.

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