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Original Article

The Assessment of Knowledge Regarding Hypertension and Treatment Adherence

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ABSTRACT

Background: Hypertension is a leading global health challenge due to its substantial role in increasing the risk of cardiovascular and renal diseases. Despite its prevalence, there remains a significant gap in the general population's knowledge about hypertension management and the adherence to treatment protocols.

Objective: This study aimed to assess the level of knowledge regarding hypertension and the adherence to treatment among patients diagnosed with the condition in a tertiary care setting in Lahore, Pakistan.

Methods: A descriptive cross-sectional study was conducted at Jinnah Hospital, Lahore. The study utilized convenient sampling to recruit 135 patients diagnosed with hypertension. Data were collected using a structured questionnaire adapted from Morisky et al. (2008), which included sections on demographic data, knowledge about hypertension, and treatment adherence. The reliability of the scales was confirmed with a Cronbach's alpha of 0.997 for the knowledge scale and 0.983 for the adherence scale. Data analysis was performed using descriptive statistics and frequency distributions in SPSS version 25.

Results: The majority of participants were aged between 31-40 years (75.8%), with a balanced gender distribution (53.3% male, 46.7% female). Educational levels varied, with the majority holding matric qualifications (46.7%). Knowledge about hypertension was moderate, with 45.9% correctly identifying the implications of high diastolic or systolic blood pressure. However, substantial misconceptions persisted regarding the necessity of lifestyle changes alongside medication. Treatment adherence was moderately low, with 45.9% of participants frequently forgetting to take their medication, and a significant portion deliberately skipping doses.

Conclusion: The study highlighted a moderate understanding of hypertension and a corresponding moderate to low adherence to treatment protocols among patients. These findings underscore the urgent need for targeted educational interventions to enhance knowledge and improve adherence, ultimately aiming to reduce the burden of hypertension-related complications.

Keywords: Hypertension, Patient Education, Treatment Adherence, Knowledge Assessment, Health Outcomes, Descriptive Cross-Sectional Study, Tertiary Care Hospital.

INTRODUCTION

Hypertension, commonly referred to as high blood pressure, is a primary contributor to illness and death globally, posing a significant health challenge. Characterized by systolic blood pressure readings of 140 mmHg or higher, or diastolic blood pressure readings of 90 mmHg or higher, confirmed across multiple clinic visits, it significantly increases the risk of cardiovascular and renal diseases (1, 2). According to recent studies, hypertension is responsible for 51% of stroke-related deaths and 45% of deaths due to heart disease globally (2). The World Health Organization reports that about 47% of people in developing nations and 49% in developed nations suffer from hypertension, highlighting its widespread impact (3). This condition is also identified as a leading factor in the global burden of disease, contributing to 10.8 million deaths annually (5).

Despite the severity of hypertension and its complications, there is a notable gap in public knowledge about the condition and its management, which complicates efforts to control it effectively (7). Adherence to hypertension treatment regimens is often poor, which not only leads to unsatisfactory health outcomes but also increases healthcare costs significantly (8) suggest that enhancing community knowledge and improving treatment adherence are crucial for managing hypertension more effectively at a population

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level. Moreover, common causes of nonadherence include adverse effects, inadequate blood pressure control, lack of patient involvement in the treatment process, and insufficient knowledge about the disease and its treatment, particularly in dosage information (9).

The variability in knowledge about hypertension and adherence to its treatment across different regions necessitates targeted research to identify the underlying factors contributing to these disparities. This is particularly relevant in Pakistan, where the prevalence of hypertension is high and poses significant health risks. Efforts to improve knowledge and adherence have been made through initiatives such as the National Action Plan for the Prevention and Control of Non-Communicable Diseases, which focuses on community-based interventions and public awareness campaigns (13).

In this context, understanding the level of knowledge and treatment adherence regarding hypertension among the Pakistani population is imperative. This assessment could help in developing targeted interventions that could significantly enhance patient outcomes and reduce the burden of hypertension on individuals and healthcare systems. The significance of this study lies in its potential to bridge the critical knowledge gap and improve treatment adherence, which are pivotal for mitigating health risks associated with hypertension and enhancing the overall effectiveness of hypertension management strategies.

MATERIAL AND METHODS

The study aimed to assess the level of knowledge regarding hypertension and treatment adherence using a descriptive cross-sectional research design. Conducted at a tertiary care hospital in Lahore, Pakistan, the target population comprised patients diagnosed with hypertension. Convenient sampling was employed to select participants from those attending the Outpatient Department of Jinnah Hospital, Lahore, Pakistan.

A total sample size of 135 patients was determined using Slovin's formula. Data collection involved an adopted questionnaire (Morisky et al., 2008), which was divided into four sections. The first section gathered demographic data including gender, marital status, education, and occupation. The second section assessed participants' knowledge about hypertension through seven items, while the third section evaluated treatment adherence using six items. The questionnaire was self-administered, available in both English and Urdu to accommodate all participants, and distributed in a private setting to maintain the confidentiality of participant information.

Participants were informed about the study's purpose, methods, potential risks, and benefits prior to participation. They were required to sign a consent form to participate, with assurance that their personal information would remain confidential and be used solely for research purposes. Participants were free to opt out of the study without any penalty. All collected data were securely stored and accessed only by authorized personnel. The ethical considerations of the study were in line with the Declaration of Helsinki to ensure no harm to the participants.

Data analysis was conducted using SPSS version 25. Reliability analysis of the questionnaire indicated high reliability, with a Cronbach's alpha of .997 for the hypertension knowledge scale and .983 for the treatment adherence scale, suggesting that both scales were reliable for measuring the intended constructs (14).

The results of this study are expected to provide valuable insights into the levels of knowledge and treatment adherence among hypertensive patients in Lahore, potentially guiding future interventions to improve hypertension management and patient outcomes in the region.

RESULTS

In the study conducted at a tertiary care hospital in Lahore, Pakistan, the demographic breakdown revealed a diverse age range among the participants with a significant concentration in the middle age groups. Specifically, 34.1% of participants were aged 31-35, followed by 40.7% in the 36-40 age group, highlighting the prevalence of hypertension in these age ranges (Table 2). Gender distribution was relatively balanced with 53.3% male and 46.7% female participants. A substantial majority, 84.4%, were married, indicating that the bulk of the sample comprised adults in stable domestic relationships.

Table 1: Reliability Statistics

Cronbach's Alpha	Number of Items
0.997	22
0.983	14

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Table 2: Demographic Characteristics

Age Group	Frequency	Percent
26-30	9	6.7%
31-35	46	34.1%
36-40	55	40.7%
41-50	25	18.5%
Total	135	100.0%

Gender	Frequency	Percent
Male	72	53.3%
Female	63	46.7%
Total	135	100.0%

Table Marital Status Breakdown of Participants

Marital Status	Frequency	Percent
Married	114	84.4%
Unmarried	6	4.4%
Divorced	15	11.1%
Total	135	100.0%

Education Level	Frequency	Percent
Primary	8	5.9%
Middle	43	31.9%
Matric	63	46.7%
Intermediate	18	13.3%
Graduate	3	2.2%
Total	135	100.0%

Employment Status	Frequency	Percent
Working	104	77.0%
Not Working	31	23.0%
Total	135	100.0%

Table 3: Knowledge Regarding Hypertension

Statement	True	False	Don't Know	Total
High diastolic or systolic blood pressure indicates increased BP	62	35	38	135
Increased blood pressure is the result of aging, so treatment is unnecessary	54	65	16	135
If the medication for increased BP can control it, no need to change lifestyles	54	64	17	135
Individuals with increased BP must take their medication in a manner that makes them feel good	53	65	17	135
Drugs for increased BP must be taken every day	54	64	17	135
The best cooking method for those with increased BP is frying	53	64	18	135
The best type of meat for those with increased BP is white meat	53	65	17	135
Individuals with increased BP must take their medication throughout their life	54	65	16	135

Table 4: Treatment Adherence

Behavior	All Time	Most of Time	Sometimes	Never	Total
Forget to take HBP medicine	62	35	37	1	135
Decide not to take HBP medicine	55	62	18	-	135
Eat salty food	54	65	16	-	135

Add salt before eating	54	64	17	-	135
Eat fast food	54	65	16	-	135
Make next appointment before leaving the doctor's office	53	65	17	-	135
Miss scheduled appointments	54	64	17	-	135
Forget to get prescription filled	53	65	17	-	135
Run out of HBP pills	53	64	18	-	135
Skip HBP medicine before going to the doctor	54	64	17	-	135

Educational levels among the participants varied, with 46.7% having completed matriculation, suggesting a moderate level of education in the majority of the sample. This was followed by 31.9% with middle school education. Only a small fraction, 2.2%, were graduates, reflecting perhaps the general educational attainment in the region (Table 2). Employment status showed that a significant 77% of the sample were working, which may influence their lifestyle choices and health management behaviors.

Reliability of the instruments used in the study was notably high. The hypertension knowledge scale yielded a Cronbach's alpha of 0.997, indicating excellent internal consistency among the 22 items. Similarly, the treatment adherence scale recorded a Cronbach's alpha of 0.983 across 14 items, suggesting that the measures were robust and reliable (Table 1).

In assessing knowledge about hypertension, the results were quite telling. Only 45.9% of participants correctly identified that high diastolic or systolic blood pressure indicates increased blood pressure. This lack of basic knowledge underscores a critical gap in understanding among the population (Table 3). Misconceptions about hypertension were prevalent; for instance, 40% erroneously believed that increased blood pressure is a natural result of aging and therefore does not necessarily require treatment. Additionally, a significant portion of the sample, 47.4%, mistakenly thought that medication alone is sufficient to manage blood pressure without the need for lifestyle changes.

Regarding treatment adherence, the findings indicated a concerning trend of non-compliance (Table 4). A substantial 45.9% of respondents admitted to often forgetting to take their hypertension medication. Moreover, 40.7% decided not to take their medication at all times, highlighting the challenges in maintaining treatment regimens. Dietary habits also showed poor adherence, with 48.1% frequently consuming salty foods and 47.4% often adding salt before eating, which are known risk factors for exacerbating hypertension.

The study's results reflect significant educational and behavioral gaps regarding hypertension management among patients. These gaps emphasize the need for enhanced educational interventions and tailored public health strategies to improve both understanding and treatment adherence, potentially leading to better health outcomes and reduced healthcare burdens.

DISCUSSION

The current study provided insights into the interrelations between knowledge about hypertension and adherence to treatment among hypertensive individuals. The findings underscore a moderate level of understanding and corresponding adherence to treatment regimens, which align with previous studies indicating similar trends (15-17). This study further elucidated specific knowledge gaps, particularly in recognizing the implications of lifestyle changes and the continuous nature of hypertension management.

In terms of hypertension knowledge, the study revealed considerable discrepancies in understanding critical aspects of hypertension management. For example, a significant proportion of participants held misconceptions about the necessity of medication and lifestyle modifications. This was evident from the responses indicating that a sizeable segment of the cohort believed medication alone suffices for managing the condition, negating the need for lifestyle adjustments. These findings are consistent with prior research that highlights persistent myths surrounding hypertension treatment, which can severely impact patient outcomes by fostering poor adherence to prescribed therapies (17).

Regarding treatment adherence, the results were indicative of moderate adherence among the participants. This was exemplified by the substantial number of respondents who frequently forgot to take their medication or intentionally skipped doses. Such behaviors underscore the challenges in sustaining treatment adherence, which are compounded by insufficient knowledge or misunderstandings about the disease. This aligns with earlier studies which suggest that enhanced patient education could significantly improve adherence rates (18).

The study's design and execution, while robust in many respects, presented certain limitations that might affect the generalizability of the findings. The cross-sectional nature of the research inhibits the ability to establish causal relationships between knowledge levels and adherence behaviors. Furthermore, the reliance on self-reported data introduces potential biases such as recall bias and

social desirability bias, which might have led to underreporting or overreporting of adherence behaviors and knowledge accuracy (18-20).

Despite these limitations, the study lays a foundation for future research, emphasizing the need for interventions that address the identified knowledge gaps. Such interventions could be tailored to enhance patient understanding and engagement, thereby improving adherence and overall management of hypertension. Future studies could benefit from incorporating objective measures such as clinical assessments and medication adherence monitoring tools to validate self-reported data and mitigate the biases associated with self-reports. Additionally, exploring the socio-cultural factors that influence knowledge and adherence could provide deeper insights into effectively tailoring educational and intervention programs (16, 18).

The findings from this study have implications for public health policies and educational initiatives aimed at improving hypertension management. By addressing the specific knowledge deficits identified, healthcare providers can develop targeted educational programs that not only increase awareness but also foster sustained adherence to treatment regimens. This approach is likely to enhance the effectiveness of hypertension control programs and could lead to a reduction in the prevalence of hypertension-related complications, thereby alleviating the overall burden on healthcare systems.

CONCLUSION

In conclusion, this study highlights the critical role of patient education in the management of hypertension and suggests that improving knowledge can significantly influence treatment adherence. These insights contribute to the broader understanding of chronic disease management and underscore the importance of integrated healthcare strategies that encompass patient education, community involvement, and continuous monitoring of treatment effectiveness.

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