Barriers to the consistent use of medicine in individuals with hypertension in rural Bangladesh: A qualitative study

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ABSTRACT

Background & objectives: Researchers have encountered significant variations in the obstacles to medication adherence in patients with hypertension, leading to uncertainty in concluding the necessity for further exploration of medication adherence. Consequently, it is imperative to create helpful therapies aimed at reducing these barriers. The objective of the present study was to identify obstacles to adherence among individuals with hypertension. **Methods:** A qualitative content analysis was conducted. The participants consisted of patients with hypertension who had clinic records in the health centers of Ibrahim Medical College, Dhaka. The study employed a purposive sampling strategy, which was carried out until data saturation was reached. The semi-structured interview was chosen as the most suitable strategy for data collection. The data were examined using qualitative content analysis, constant comparative analysis, and MAXQDA (Version 10) software. **Results:** Following a thorough examination and categorization of fundamental ideas, a total of 1542 primary codes were derived from the interviews. Classes were established through the use of codes and underwent repeated reviews, which involved the processes of summarization and identification of similarities. Primary topics were determined through extensive analysis and comparison of classes. The intellectual themes were called based on their inherent character. The themes encompassed in this study are: (1) the environmental difficulties encountered in daily life, (2) the incongruity amongst patients, (3) the tendency to neglect medication, and (4) the ineffectiveness of family suggestions. **Conclusions:** The study identified four characteristics of barriers to patient adherence to treatment. These findings can be valuable for health managers and planners in developing strategies to address medication adherence, which is a crucial element in controlling hypertension in patients.

Key words: Barriers, high blood pressure, compliance with medicine, qualitative research.

INTRODUCTION

Hypertension predisposes individuals to the occurrence of cardiovascular problems and kidney failure, resulting in a substantial rise in mortality rates. Consequently, this leads to exorbitant expenses. There are different strategies to achieve therapeutic goals in hypertension, including lifestyle changes, general approaches, treatment follow-up, and blood pressure management. The use of medication is a fundamental method for

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controlling hypertension, and low blood pressure medications are commonly prescribed by doctors.[1,2] Research and studies have demonstrated that treating hypertension with antihypertensive medication can lower diastolic blood pressure by 5-6 mmHg. This reduction in blood pressure can decrease the risk of coronary artery disease by 20%-25% and the risk of stroke by 35%-40%.[3,4]

Although there are numerous drugs available for treating hypertension that have been demonstrated to be effective, the reported rates of blood pressure control are highly unsatisfactory. This has transformed the management of high blood pressure into a significant health obstacle. Approximately half of the patients who are administered antihypertensive drugs are projected to discontinue treatment within a span of one year.[5,6]

Research suggests that implementing strategies to improve drug adherence is a crucial concern in healthcare systems for managing healthcare costs.[7,8] The complicated nature of medication adherence, with its numerous important determinants and problems, has made it exceedingly challenging to conduct interventions aimed at improving adherence to medical treatment.[9]

Given the variability of barriers to medication adherence in patients with hypertension across different communities and individuals, numerous researchers have determined that it is imperative to investigate these barriers among patients in society using objective methodologies. Hence, it is crucial to develop appropriate measures in order to mitigate these obstacles. The studies conducted in this field suggest that qualitative research is necessary to identify the main factors related to patients' needs for effective interventions, given the complexity of treatment adherence. Therefore, it is important to thoroughly examine the obstacles to medication adherence using a comprehensive and qualitative approach in real-life settings. The study process revolves around the primary research question, namely, "What are the obstacles to medication adherence in individuals with hypertension?" The most suitable approach for this study is a methodology that can comprehend the essence of a phenomena inside its authentic setting, encompassing its structure, process, and the influential variables contributing to its development. The objective of this study was to identify the obstacles that hinder individuals with hypertension from following their prescribed medication regimen, using a qualitative research approach.

MATERIALS AND METHODS

This study is a qualitative investigation conducted through the method of content analysis. The research setting for this study encompassed the health centers associated with Ibrahim Medical College in Dhaka, Bangladesh. The participants in this study were selected using purposive sampling, namely the marginal technique. Sampling was conducted until data saturation was reached. The inclusion criteria for patient selection in this study encompassed a confirmed diagnosis of the disease by a physician, possession of a medical history and file at the health center, willingness to participate in the study, and absence of dementia.

The initial subject was chosen based on a 15-year record of hypertension, and the insights obtained from this interview aided in the selection of the subsequent participant. Following the establishment of the initial classes, the subsequent selection of participants was determined

by their potential to contribute to a more comprehensive understanding of the developing classes. The sampling technique was carried out until the data reached saturation. After conducting interviews with sixteen participants, the study achieved data saturation and established the initial categories. Nevertheless, two further interviews were carried out in order to enhance the level of confidence. However, no novel information was obtained that would warrant the creation of new categories or coding. Hence, a grand total of 18 interviews were conducted. Upon acquiring the requisite authorization, the researcher consulted the research setting, presenting the permit, and proceeded to pick participants according to the defined objective and inclusion criteria (purposive sampling). During the researcher's introduction, he obtained informed consent from the participants while also outlining the research goals and objectives. Prior to commencing interviews, the participants were given the assurance that all information discussed during the interview would be kept confidential and they had the freedom to withdraw from the research at any point. Furthermore, the participants were verbally given approval to record their statements.

The interviews were conducted in a calm setting, taking into account the environmental elements, time constraints, and patient circumstances (tolerance). Each interview lasted between 30 and 45 minutes and was conducted individually, based on the patients' willingness to participate. The interviews were initially transcribed verbatim by hand and subsequently inputted into the analysis program. Given the immersive nature of qualitative research, the interviews were thoroughly examined on multiple occasions. The subjects were chosen to have a wide range of diversity in terms of the length of their sickness, age, gender, education status, and occupation.

The primary approach employed for data gathering in this study involved conducting in-depth and semi-structured interviews that utilized open-ended questions. During this investigation, the interviewer commenced the interview by posing general inquiries subsequent to obtaining the demographic data. Subsequent and follow-up questions were offered to the participant to gain further clarity on the concept being studied, using the information they had already provided. The comprehensive interview questions were also presented during the interview in accordance with the responses.

The data collection and analysis were carried out in accordance with the research objective, following a five-step process. Firstly, the researcher familiarized themselves with the data. Then, primary codes were generated to categorize the data. Next, the codes were reviewed to identify recurring themes. The themes were then carefully examined and compared with the data to ensure their accuracy. Finally, the themes were defined and named.

The coding process employed an inductive strategy at the outset of the study. As the research progressed and the contents were identified, a deductive approach was also utilized for the review. The study employed constant comparative analysis as the data analysis approach, which enhances the reliability and trustworthiness of the data. The participants' statements and expressions were transcribed verbatim, and a content analysis was conducted on them, followed by coding. Consequently, the researcher was fully engrossed in the facts to get a novel comprehension or revelation. Initially, data analysis commenced by extensively reading the content to

immerse oneself and identify a broad perspective. Subsequently, the texts were meticulously scrutinized, with each word being carefully examined in order to extract the codes. This is an ongoing and systematic procedure that involves extracting the codes and assigning them names. The research utilized MAXQDA Plus 2010 v10.4.16.1 (VERBI Company; Berlin, Germany) Multilingual, a qualitative analysis software, to assist with the primary stages of the study.

For the dependability of this study, four criteria were employed: acceptability, transferability, consistency, and confirmability.[10]

Additionally, an external audit was done in this investigation. To facilitate this objective, specific portions of the interview text, accompanied by pertinent codes and the resulting categories, were distributed to several observers for the aim of evaluating the analysis process and providing feedback on its precision. Significant emphasis was placed on the utilization of maximum variation sampling in this investigation. This sampling strategy enhances the representativeness and generalizability of the findings to a wider audience or readership. Furthermore, to ensure the research's confirmability and enable auditing, the researcher meticulously documented and disclosed each stage and procedure of the research, so facilitating the potential for subsequent investigation by other researchers. The ethical committee of the institute granted approval for this investigation.

RESULTS

The average age of the participants was 41.22 ± 8.73 years, ranging from 24 to 61 years. The majority of the patients possessed a university education. Furthermore, a significant proportion of the interviewees, specifically 47%, exhibited a lack of control over their blood pressure. The sickness had an average duration of 7 years, whereas the medicine for lowering blood pressure was taken for 5 years. From the 18 interviews, a total of 1542 first-level codes were recovered without accounting for any overlapping. However, after considering the overlapping and merging of codes to improve the precision of coding and facilitate the research process, the number of initial codes was decreased to 910. The obstacles to medication adherence encompassed four key concepts: lifestyle problems, patient incompatibility, forgetfulness regarding medicine use, and nonexpert guidance. These concepts are consistently present in the disease progression and hinder the patients' ability to attain a state of normal functioning and comply with medicine. Patients recognize these issues while undergoing the adherence process and make efforts to avoid them. The patient's identification of bad effects and subsequent avoidance behaviors developed gradually over time as a result of being exposed to the negative impact these effects had on their life, and their efforts to comply with medicine. Indeed, these avoidance tendencies are evident in the patients' encounters and engagements. The survey participants conveyed that they encountered multiple obstacles to adhering to medicine due to environmental factors. Over time, the patients developed a growing familiarity with these characteristics and consequently sought to avoid them due to their significant impact.

Patients identified lifestyle problems as a significant obstacle to drug adherence. The living environment challenges encompass the difficulties and concerns present in the patient's surroundings, which significantly impact the patient's mental engagement and their ability to effectively manage their illness and

adhere to medicine. The patients reported various issues and obstacles in their living environment. These hurdles can be categorized into three subcategories: economic issues, personal obligations, and insufficient support from family. These issues became increasingly apparent, particularly during the initial stages of drug adherence, which necessitated the patient's complete focus on taking the prescription and managing the condition. This significantly restricted the patient's willingness to follow the prescribed medication and stick to it.

Patients from low-income families faced significant economic challenges. An individual involved in this particular domain states:

"I attempted to acquire both medication and various items without incurring any cost, but regrettably, I was unsuccessful." What actions should I take to address our poverty, as we lack financial resources. "We are not actively seeking it, and we lack any entitlements or privileges," (p1).

Additionally, several patients were required to consume a substantial dosage of medication as a result of their chronic conditions, such as diabetes and hypertension. However, these patients encountered difficulties in affording the cost of these medications. Regarding this matter, the participant stated:

"Our financial situation is unfavorable." This has a significant impact on me. I require a package of medication for diabetes and hypertension, and it is quite expensive.

Another issue in the patients' living environment is the multitude of obligations and their lack of compatibility in daily life. The majority of patients exhibited a moderate socioeconomic status and possessed several jobs and responsibilities that could impact their ability to focus, concentrate, and commit to managing their disease and adhering to hypertension medication.

These responsibilities were particularly evident, particularly among married individuals and women. The women's duty in caring for children was so significant that they were unwilling to take a break or seek medical attention, even in cases of crises or severe hypertension issues. An individual in this vicinity expressed:

"I was hospitalized and closely monitored for a few days until I was allowed to return home. I insisted that I am not a priority as my children need to attend school and I cannot leave them."

The patient's lack of cooperation from their family posed an additional issue in their life, acting as an obstacle to their adherence to treatment. Although patients may have companions in their lives, some are lacking any form of assistance or support, which can significantly impact their attitude and motivation. Regarding this matter, the participants stated:

Children frequently experience tension and discomfort. Their actions were so impactful that I entirely neglected to take my medication. I declined assistance. Their most valuable assistance lies in their ability to alleviate any stress I may experience.

Certain patients perceive family-centered collaboration as being limited to the first stages of the sickness, asserting that these forms of assistance and cooperation diminish as the illness progresses and time elapses. Occasionally, the onset of the disease is accompanied by entirely distinct behaviors. An individual involved in this particular domain states:

"During the initial month, individuals exhibited a high level of caution in their behaviors and actions. However, over time, there was a shift towards behaving in a completely different manner, which may have had negative consequences for us."

Another obstacle was the lack of compatibility among patients. This idea pertains to the responses, incompatibilities, and clashes experienced by patients during the process of adhering to treatment. This notion has been derived from the categories of psychological response with the start of disease, unhappiness with the medication process, and the difficulty to adhere to the treatment during the medication adherence process. Confronted with the condition and receiving advice and therapies, the patients experienced a range of tensions, including preoccupation. A patient in this region declares:

"Initially, I experienced stress during the early stages of the illness, which led to an intense preoccupation with both eating and adhering to the prescribed medication." I consistently expressed that it has a high salt content, which both irritates me and others.

Depression was a prevalent psychiatric response throughout the initial phases of the disease, potentially playing a significant role in disrupting patients' lives. A contributor in this association states:

"Upon the initial lack of response from the medication, I experienced severe depression, a profound sense of disappointment, intense frustration, and significant disruption to my life" (p 12).

The patient's exhaustion resulting from the procedure of adhering to medicine was another psychological response that may have led to feelings of dissatisfaction or a reduced motivation in controlling and managing the disease. One participant in this matter states:

"I am fatigued by the constant attention and frequent journeys at present." Occasionally, I admonish myself to cease the behavior. To what extent can an individual possess the ability to maintain complete focus? According to the author, the presence of several problems will result in failure for everyone.

Patients' dissatisfaction with medication was another source of incompatibility. Several patients expressed dissatisfaction with medication adherence or the escalation of drug dosage during the therapy regimen. This discontent may have been caused by either failure to comply with the instructions or a decrease in the patients' motivation to stick to the treatment regimen. Regarding this matter, the participants express:

"I was given pills of different sizes, including small and large ones. There was a pill for weight loss, as well as a pill for thinning the blood. I have a strong aversion towards these pills, but I am currently taking them despite my dislike and lack of desire for any of them." (p11).

Another issue with patients was their lack of ability to tolerate the treatment. The patients' lack of determination was identified as a contributing factor in their inability to endure the treatment. The individuals in the vicinity express:

"Initially, I did not adhere consistently to the prescribed medication regimen. In other words, I was unable to embrace the medication on a spiritual level. It was not a matter of forgetfulness, but rather a difficulty in accepting and regularly taking the medication. I would only take the medication sporadically, particularly

when my meals were not consumed properly."

Patients frequently experienced prescription non-adherence due to forgetfulness. A prevalent issue reported by patients during the initial stages of diagnosis was the occurrence of drug nonadherence due to forgetfulness. The individual involved in this relationship states:

"Forgetfulness is a constant factor in my life. I often neglect to take my medication for a day, which is problematic considering I have high blood pressure." (p8).

Another barrier to medication adherence is the reliance on nonexpert information and recommendations. The adverse feedback and encounters from the patient's acquaintances, which encompassed a diverse group of close relatives, friends, and unfamiliar individuals in the vicinity of the patients, had a substantial impact on diminishing the level of medication adherence. In certain instances, it even led to a complete lack of commitment to medication adherence. The patients complied with the advice, even though the physician and health-care staff emphasized them. The individuals in this region express:

There have been claims that blood pressure medication can cause stomach ulcers. I experienced gastrointestinal discomfort. I have received reports from numerous folks indicating that these blood pressure medications are unappealing and have an adverse impact on the stomach. Hence, I discontinued their usage" (p2).

DISCUSSION

Participants in this study shared their experiences and identified numerous obstacles that hinder the process of normalizing medicine, taking into account both environmental and individual factors. The patients identified lifestyle obstacles, patient incompatibility, prescription noncompliance, and nonexpert counsel as factors contributing to hurdles in medication adherence. Therefore, they made efforts to circumvent these obstacles to ensure compliance with medication.

The patients have significant hurdles related to their financial condition and economic problems, which can hinder their efforts to normalize their therapy. Multiple studies have indicated that economic factors play a significant role in patients' ability to adhere to medication.[11-13] These factors include financial difficulties and the cost of treatment, which can have a substantial impact on patients' adherence. In fact, it can even result in patients altering their medication plan or completely stopping their medication. Wu et al. have also identified economic factors as one of the key predictors of medication adherence in patients.[14]

The patient's family's noncompliance was another obstacle to medication adherence. The patient's discontent in this matter can lead to pessimistic thinking, apathy, nonadherence to medical instructions, and failure to comply with the treatment regimen, all of which can further complicate illness management and hinder efforts to ensure medication adherence. Additional research also verifies that patients' discontentment with their family environment and the support they receive from individuals can significantly impact their quality of life and adherence to medication.[14,15]

Considering that the family plays a paramount role in supporting the patient, it is unsurprising that the absence of

family cooperation, consistency, and attentiveness towards the patient generates a sense of isolation in the patient, as if they are facing the disease and treatment alone, with no acknowledgment of their difficulties by their family in this circumstance. This problem might result in the patient experiencing disappointment, irritation, dread, and worry. Dolder says that familial inconsistency can impact the patient's willingness to accept the sickness and hinder their capacity to modify their lifestyle.[8]

Patients' issues and anxieties in their everyday lives were regarded as additional obstacles to the process of adhering to medication for hypertension. The patients said that their daily preoccupations and their engagement with the issues of those around them have resulted in decreased focus on their treatment. This can also impact the patient's ability to remember to take their meds. While certain studies indicate that social roles and responsibilities contribute to an individual's sense of identity, this feeling of identity can have a significant impact on the treatment process, disregarding the effects of the disease. Nevertheless, it seems that the multitude of responsibilities in individuals with hypertension may adversely affect the management of the disease.

A significant obstacle encountered in this investigation was the patients' lack of compatibility. The fear-induced shock, imminent sense of mortality, insufficient information, and uncertainties regarding the disease's prognosis and treatment have resulted in various incongruities among patients in numerous instances. Furthermore, the occurrence of depression and other psychological issues contributes to the development of inconsistent and abnormal behaviors in patients, as well as hindering their ability to accept and manage the treatment of the disease.[16]

Maladaptive psychological responses are frequently identified as a primary cause of chronic diseases and can contribute to patients' resistance to treatment. Psychological incompatibilities are often observed as common reactions to a crisis, and they can significantly impact crisis management. Charmaz suggests that a chronic disease is an unexpected and unwelcome crisis that can disrupt various aspects of a patient's life.[17] Overall, individuals tend to display diverse reactions when confronted with a disease. Personality traits, cognitive processes, and the individual's available resources significantly contribute to the mitigation of mental disorders. It is important to remember that the patients' initial responses to the disease are distinct from mental incompatibilities.

Psychological incompatibility can lead to alterations in both the physical and mental capabilities of patients, resulting in a diminished capacity to effectively cope with and manage their condition.[18,19] This, in turn, can impact the overall outcome of their therapy and illness management. Additional research indicates that patients' responses and incompatibilities can impact their therapeutic results.[20] This effects may arise from modifying immune responses and stress response, as well as impacting patient nutrition, decreasing treatment acceptance, and reducing patient efforts to obtain treatment and medication.[21]

The act of forgetting to take pills posed an additional obstacle to adhering to the treatment regimen. A significant number of patients have reported instances of drug non-adherence, particularly during the initial phases of the illness, attributable to their daily challenges. This was more common among patients who were exclusively on antihypertensive

medications. Over time, as patients receive treatment and make attempts, the level of medication forgetfulness appears to decrease. A multitude of studies have examined the impact of patients' forgetfulness on medication adherence in hypertension. Additionally, several studies have made efforts to overcome this obstacle by implementing diverse strategies.[22,23]

MacLaughlin et al. identified forgetfulness as a significant reason for medication nonadherence among older individuals.[22] However, it appears that forgetfulness can also hinder younger patients' ability to adhere to their medication. McDonald et al. also emphasized the significance of employing uncomplicated strategies to prevent patients from becoming oblivious during the medication adherence process.[23]

An additional obstacle to medication adherence was the lack of uniform information regarding illness treatment and drug usage across patients. The conflicting information from multiple sources, including friends and relatives, has resulted in heightened stress and a negative outlook towards medication in patients. Consequently, some patients have discontinued their medication solely based on the advice and information provided by their friends, even if they have not personally experienced any adverse effects. Koch et al. argue that comprehensive and precise patient information significantly influences their behavior, particularly in disease control and management.[24] Access to accurate information regarding patients' fundamental requirements and their families is deemed crucial in the process of disease management and treatment normalization.[25] Following acceptance of the disease, patients begin actively seeking and acquiring information on different facets of the illness and its treatment. Patients do not solely rely on physicians and nurses for information. They also gather information about their illness and treatment from other individuals, including peers. Consequently, the involvement of peers and associates in providing information and motivating patients to manage their disease and adhere to treatment is unavoidable. Providing improper recommendations and guidance that contradict the opinions of medical professionals might disrupt patients.[26]

The limitations of this study include the exclusion of patients from health centers and the omission of sick individuals seeking care in the private sector. Additionally, the low socioeconomic status of the subjects should be taken into account when interpreting the results.

CONCLUSION

The study findings revealed that the primary obstacles to medication adherence in patients with hypertension are the difficulties posed by the living environment, patient incompatibility, forgetfulness in taking medication, and receiving nonexpert counsel. The results of this study can be utilized to design efficacious treatments aimed at mitigating the identified obstacles and enhancing medication compliance among Iranian patients with hypertension.

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AUTHORS' CONTRIBUTION

All the authors have contributed equally.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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