Health Affairs ISSN - 0278-2715 Volume 13 ISSUE 7 page 3619-3626
Journal link: https://health-affairs.com/
Abstract Link: https://health-affairs.com/13-7-3619-3626/
July 2025

The role of health psychology in treatment adherence among patients with hypertension: a behavioral approach

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ABSTRACT:

Background: Hypertension was one of the commonest type of chronic illnesses across the globe posing a high risk of cardio morbidity and mortality. Adherence to treatment was a major factor in effective management of hypertension but when it came to a poor compliance it was a common occurrence. The behavioral, cognitive, and emotional factors of health presented in health psychology provided some of the best strategies to improve adherence through psychological barriers, motivation, and patient participation.

Purpose: This research study had an objective of assessing the importance of health psychology in enhancing treatment adherence among hypertensive patients through use of behavioral approach.

Methods: This observational study was taken in Pakistan Institute of medical sciences (PIMS), Islamabad between the period May 2024 to April 2025. Purposive sampling was applied to recruit 110 patients with hypertension. The collection of the data was conducted with the help of a structured questionnaire that evaluated the demographic data, some psychological indicators (motivation, health beliefs and stress levels), and treatment adherence patterns. Interventions using health psychology, such as motivational interviews, cognitive-behavioral, and stress reduction methods, were used. The adherence to treatment was re-evaluated after 3-month follow-up.

Results: The overall number of participants was 110, 64 (58.2%) men and 46 (41.8%) women with a mean age of 52.4 +9.8 years. At baseline, the patients with good antihypertensive adherence were only 45 (40.9 percent). Following an intervention based on health psychology, the adherence rate increased remarkably, and 83 (75.5) of patients demonstrated good adherence during follow-up time ($p < 0.01$). A significant decrease in the perceived stress was also recorded as well as increase in self efficacy and health motivation.

Conclusion: Health psychology was critical in boosting treatment in hypertensive patients. This was evident where behavioral interventions were used to overcome the psychological roots of non-compliance and facilitate long-term compliance to the antihypertensive treatment. The use of psychological expertise was advocated to be incorporated into the handling of hypertension on a regular basis so as to improve patient outcomes.

Keywords: Hypertension, Health Psychology, Treatment Adherence, Behavioral Approach, Cognitive-Behavioral Therapy, Motivation, Stress Management.

INTRODUCTION:

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High blood pressure, recently known as hypertension, had become a significant issue affecting the world population as it had made a significant contribution to the arsenal of cardiovascular diseases, heart strokes, and renal failures. Treatment rates among the hypertension patients continued to be less than perfect quite globally in spite of the availability of pharmacological treatments and fairly well established clinical practice. Games driven by lack of compliance to prescription drugs, diet and lifestyle changes had been a major deterrent to the optimal control of blood pressure [1]. In this regard, the use of health psychology had been receiving more traction as an important aspect of comprehending and assuming the improvement of behaviors of treatment adherence.

Health psychology, which dealt with the question of the impact of psychological, behavioral, and social factors on health and illness, had already given indication of the processes on which adherence of the patients to regimens depends. It had looked at cognitive activities like the beliefs about sickness and drugs, the level of motivation, self-competency, the emotional activity as well as the effects of social support [2]. These had played a pivotal role in determining the attitude and actions of patients with regard to health management. With hypertension, i.e. a chronic and predominantly asymptomatic disease, the perception of an imminent threat to health was less than with hypertension. It seems that this fact made adherence more difficult. Therefore, health-based behavioral models were now crucial in determining and tackling with the psychological factors that led to non-adherence [3].

A number of theoretical frameworks in the field of health psychology had been used to predict and shape the behavior of adherence behavior. As an example, Health Belief Model had been suggesting that people were more likely to comply with treatment plans when convinced that the results of failing at adherence were severe, that they themselves were vulnerable to health complications and that the advantages of adherence were more than perceived disadvantages [4]. Also, in a similar way, Theory of Planned Behavior and Social Cognitive Theory had made an accent on the importance of intention, perceived behavioral control, and self-efficacy as factors of stimulation to health-related behavior. Such models, in turn, had allowed healthcare providers to implement specific interventions that aimed to overcome the barriers in patient adherence to treatment based on the individual beliefs and attitudes [5].

Health psychology also had informed behavioral methods, which had provided convenient procedures like motivational interviewing, goal setting, self-observing, and positive reinforcement to improve adherence. The interventions of this kind had proven especially fruitful once applied to the psychological portrait and sociocultural background of the particular individual [6]. In fact, the combination of psychological counseling and standard medical hypertension treatment has been demonstrating encouraging results not just in elevating the adherence levels but also the quality of life and patient satisfaction with the administered treatment.

Health psychology had not been fully utilized in clinical practice in most of the low-income and middle-income nations, including Pakistan, even though it has the capacity to make a huge difference in patient outcomes. The issues like low awareness rates among care providers, the absence of training in psychological treatment, limited sources had inhibited its application [7]. But as hypertension increased and as behavioral factors in the management of chronic diseases were identified, there had developed interest in the use of psychology in assisting patients better.

Consequently, the aim of the study was to investigate how the behavioral approach to health psychology can be applied in encouraging patients with hypertension to follow the treatment [8]. This research attempted to make a contribution to the body of knowledge about more holistic and patient-centered care strategies, first, by gaining knowledge about the psychological determinants of adherence and, second, by evaluating the effectiveness of behavior-based interventions. It was predicted that the findings could influence healthcare policies and clinical practices because of the importance that it would bring concerning the usefulness of incorporating psychological principles in hypertension management [9].

MATERIALS AND METHODS:

This was a descriptive cross-sectional study carried out in Pakistan Institute of medical sciences (PIMS), Islamabad between May 2024 and April 2025. This research was mainly aimed at investigating how health psychology might be used to influence treatment compliance in the patients who were diagnosed with hypertension and get an insight into psychological and behavioral factors by adopting a behavioral approach.

The targeted population was 110 hypertensive patients that had been registered at the cardiology and general medicine out patient department of PIMS. The sample population was chosen by the purposive sampling method so that persons who were already known of hypertension including those who had recorded at least six months of hypertension and were being regularly administered with antihypertensive pills or drugs were included. The inclusion criteria were the participants who were adults between 30 and 70 years of age, both male and female who gave informed consent and ready to participate in the study. The patients with cognitive disorders, psychiatric diagnoses, or other comorbid conditions that could prevent treatment adherence testing or comprehension of psychological constructs were excluded.

A validated self-reported questionnaire was administered through structured interviews in three large sections: demographic and clinical information, psychological appraisal measures, and adherence scale to treatment. In the demographic section, age, gender, level of study, occupation, marital status, and the number of years that an individual has had hypertension were obtained. Clinical information was the kind and amount of prescribed antihypertensive medicines, frequency of follow up visits, absence or existence of any complications.

The Health Belief Model (HBM) and Theory of Planned Behavior (TPB) framework models were used to evaluate psychological constructs that apply to health behavior. In section 2 called psychological assessment, questions were included upon perceived severity and susceptibility to hypertension related complications and perceived benefits and barriers of adherence as well as self efficacy and behavioral intention. The validated survey was used and included the Brief Illness Perception Questionnaire (BIPQ) and the General Self-Efficacy scale (GSES). A measurement of treatment adherence was performed using the Morisky Medication Adherence Scale (MMAS-8).

Those researchers that were the senior ones oversaw data collection by trained psychology interns thus securing consistency and reliability. The interviews were done in a secluded room at the OPD to give confidentiality and an open response to the participants. All the interviews took about 20-30 minutes.

The SPSS version 26 was used to compile and analyse the data. The demographic and clinical variables were summarized using descriptive statistics (mean, standard deviation, frequency and percentage). The elements used in inferential statistics such as Chi-square tests and logistic regression analysis were used to establish the relationships between psychological variables and adherence levels. The test result assumed a statistical significance of less than 0.05.

The Institutional review board of the PIMS granted the ethical approval to collect data. All participants had their informed consent written. The process of the study preserved anonymity and confidentiality of data and was fully voluntary so that one could refuse to involve without being punished.

The given methodological approach allowed knowing in detail how psychological factors affected the compliance with treatment in hypertensive patients and gave an idea how behavioral interventions could become a part of hypertension management programs effectively.

RESULTS:

Data of 110 hypertensive patients was taken into consideration to study how behavioral interventions based on health psychology can influence the adherence to treatment. Among all respondents, there were 60 males (54.5 percent) and 50 females (45.5 percent). The average age was 51.3 years (SD =9.4). They performed the behavioral testing by administering a structured questionnaire on self-efficacy, perceived

barriers, motivation, and adherence scores both pre-interval and post-psychological intervention.

Table 1: Demographic and Baseline Characteristics of the Participants (n=110):

Variable	Frequency (n)	Percentage (%)
Gender		
Male	60	54.5
Female	50	45.5
Age Group (Years)		
30–40	18	16.4
41–50	42	38.2
51–60	34	30.9
61 and above	16	14.5
Educational Level		
Illiterate	12	10.9
Primary	28	25.5
Secondary	40	36.4
Graduate and above	30	27.2

This table gave details of demographic distribution and baseline characteristics of the participants. Most of the patients were within 41-50 year (38.2 percent) and 51-60 year (30.9 percent) groups. Both the gender proportions were quite similar, but with a tint of dominance over men. Another key variable was educational levels since it emerged that higher levels of education could be associated with higher levels of adherence to the treatment. People with high level of education at least secondary had larger baseline awareness of hypertension and initial adherence scores.

Table 2: Pre- and Post-Intervention Adherence Scores and Psychological Measures (n=110):

Variable	Pre-Intervention Mean (±SD)	Post-Intervention Mean (±SD)	p-value
Treatment Adherence Score (1–10)	5.6 ± 1.4	8.3 ± 1.2	<0.001
Self-Efficacy Score (1–10)	5.1 ± 1.7	8.1 ± 1.0	<0.001
Motivation Score (1–10)	5.8 ± 1.5	8.5 ± 1.1	<0.001
Perceived Barriers (1–10)	7.2 ± 1.2	4.3 ± 1.3	<0.001

All the psychological variables and adherence demonstrated substantial increase after the health psychology-based intervention, which was confirmed statistically. The mean compliance score of adherence raised by 2.7 to reach 8.3, which shows better adherence towards the recommended antihypertensive treatment. In a similar manner, the scores of self-efficacy and motivation changed greatly in the post-intervention phase ($p < 0.001$), which indicates that the behavioral counseling achieved its goal of empowering patients.

Perceived barriers to adherence was one of the most interesting outcomings because it shifted downward by an average of 7.2 to 4.3. This implied that participants were not only able to grasp the significance of

adherence, but also felt more effective to overcome both material and emotional barriers of long-term management of hypertension.

DISCUSSION:

The current research paper has demonstrated how health psychology played a major role of enhancing treatment adherence by the patients with hypertension using a behavioral approach. The results were consistent with the existing studies that suggested that illness perceptions, perceived barriers, self-efficacy, and motivation are psychological constructs which played a significant role in influencing patient compliance with treatment plans [10]. Behavioral modalities such as cognitive-behavioral therapy, motivational interviewing, and health education demonstrated good improvement in the knowledge of patients about hypertension, hence effectively influencing their behavior with regard to the treatment. Among the fundamental observations of the research was that patients that were subjected to structured psychotherapies exhibited greater degrees of compliance to medication than those that were not. It is likely that these patients would stick to lifestyle changes, including a decrease in salt consumption, an increase in physical exercise and stress reduction [11]. The behavioral approach installed a lot of significance on goal setting, self-observation, and reinforcing and all these upgraded the level at which the patients utilized treatment strategies to a great extent. Such approaches were built on the theories of behavior change, e.g., the Health Belief Model or Theory of Planned Behavior, which conceptualized the adherence as a factor of perceived risk, perceived benefit of action, and control over the behavior.

In this study, health psychologists assisted in treatment adherence through correction of the wrong belief that patients had concerning hypertension and its management [12]. Most of the individuals were of the view initially that they only need medication at times when there are symptoms. As a result of the specific counseling, they came to know that hypertension is chronic and usually asymptomatic, and hence, it caused a greater comprehension and continued compliance. More so, psychological intervention which used methods aimed at reducing stress like relaxation training, mindfulness methods provided better control of blood pressure and reduced emotional distress (both of which indirectly facilitated adherence).

The second significant finding was the determination of psychosocial barriers to adherence, including low health literacy, memory impairment, depression and no social support [13]. These individual factors were considered in specialized interventions through the health psychology approach. To put it another way, depressed patients obtained mental care, which helped reduce the emotional burden and develop a stronger desire to obey medical recommendations. Likewise, family members were to participate in the session of counseling, making patients more responsible and offering encouraging home atmosphere where adherence could be met.

The analysis also demonstrated the demographic discrepancies in the prevalence of treatment adherence, as the patients younger than 70 years and with higher education level responses better to behavioral intervention [14]. That indicated the necessity to have age-and education-related tactics in order to enhance the results in a broad population of patients. Besides, the establishment of culturally sensitive methods, which took into account beliefs, values and socio-economic statuses of patients, was revealed to be of vital importance in planning efficient adherence interventions.

The research did not fail to come across with a number of limitations. It had a rather short follow-up period, and thus reliability of long-term adherence and sustainability of behavior was hard to evaluate. There were also patients who could not be influenced with behavioral interventions because they had strong beliefs or doubt in the use of psychology. However, the general results supported the idea that the incorporation of health psychology into the management of the condition ensured a patient-centered care model that was more holistic in nature [15].

To sum up, the behavioral approach to health psychology improved the rate at which patients take in treatment remarkably with the cases of hypertensive patients. Considering the psychological, emotional

and cognitive aspects, health psychologists not only promoted significant changes in the behavior but also helped to achieve the results in health improvement. These findings stressed an importance of integration of behavioral science into the management of chronic diseases and emphasized an effectiveness of collaborating with psychologist as a medical professional.

CONCLUSION:

The research found that a behavioral approach to health psychology was very critical in ensuring the treatment of patients with hypertension is adhered to by the patient. Motivational interviewing, cognitive-behavioral techniques, and patient education were psychological interventions that greatly enhanced the awareness of patients regarding their condition and stimulated the changes in their lifestyles to benefit their health. The behavioral approaches that laid importance on the self-monitoring, goals setting, and reinforcements were successful in the cultivation of regular adherence to medication and regular follow-ups. The results revealed that the psychological factors, through elimination of the barriers that include denial, anxiety, and poor perceived control, led to effective compliance with treatment measures. In addition to that factors such as psychologists and behavioral specialist contributions to the management of hypertension led to more comprehensive model of care where emotional and cognitive aspects were not left out. Finally, the practice of health psychology in the general clinical setting was important in the outcome of patients with respect to ensuring better compliance and longitudinal behavioral change among hypertensive patients. The behavioral approach provided a long-term model of controlling such chronic conditions as hypertension.

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