

Self-Management of Hypertensive Patients in Accordance with Their Knowledge

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ABSTRACT

Objective: To evaluate hypertensive patients' knowledge about hypertension, evaluate self-management behaviors; and then investigate the relationship between knowledge and self-management.

Study Design: A descriptive cross-sectional study

Place and Duration of Study: This study was conducted at the Al Diwaniyah City, located in Diwaniyah Governorate, Iraq from 16th October 2025 to 1st March 2026.

Methods: 165 hypertensive patients were enrolled.

Results: Most patients had a high level of knowledge of hypertension, as 81.8% of patients had good knowledge. Smoking, alcohol consumption, dietary control, exercise and follow-up visits were especially relevant to the patient, but complication concerns and abnormal blood pressure values were still present. Self-management was relatively fair in general and 77.0% exhibited moderate self-care practices. Knowledge resulted in a highly significant relationship with self-management.

Conclusion: Better knowledge was associated with better self-management. Enhancing patient education, counseling and behavioral support could enhance daily self-care and blood pressure control.

Key Words: Hypertension, Self-management, Patient knowledge, Self-care behavior, Blood pressure control

Citation of article: Ameer HMA. Self-Management of Hypertensive Patients in Accordance with Their Knowledge. *Med Forum* 2026;37(6):160-164. doi:10.60110/medforum.370630.

INTRODUCTION

Hypertension continues to be a serious chronic health issue and involves a long-term approach of both pharmacological treatment and ongoing lifestyle modification. All of the studies we reviewed demonstrated that self-management is at the heart of the treatment of hypertension, as patients need to engage in many daily decisions around the use of medications, as well as diet, exercise, blood pressure monitoring, and other routine health checks.^{1,2} Qualitative and quantitative studies contribute to the evidence on self-management in hypertensive patients across different aspects including medication adherence, low-salt and healthy dietary practices, physical activity, blood pressure monitoring, abstaining from smoking, and follow-up with health services.³⁻⁵ Most patients have poor conduct in executing these behaviors. The medication, diet, physical activity, and blood

pressure monitoring are nonaligned, such could lead to inadequate control of blood pressure, leading to complications.^{4,6}

The availability and awareness of hypertension are often called attention to as a driving force for the ability of patients to control their condition. Patients who have established how hypertension is defined, the need for lifelong treatment, lifestyle modification, and regular monitoring will be more likely to engage in appropriate self-care behaviours.^{6,7} An association exists between poor knowledge and misconceptions about treatment, medication utilization, poor diet control, sedentary lifestyle, and infrequent blood pressure checks.^{4,8} Further information through education and self-management support to patients could help achieve such improvement, and it has been reported that enhanced patient's knowledge can lead to improved treatment adherence, self-care, and blood pressure control.^{1,7} This may indicate that knowledge should not only be considered as a cognitive state but also as a practical foundation for improved clinical control of hypertensive disease.

Martin et al⁶ found a positive correlation between knowledge and hypertension self-management practice, while Gusty et al⁴ reported that knowledge was significantly related to adherence in weight management and physical activity. Rikmasari et al² identified disease knowledge as the strongest factor associated with better self-management, and Asmoro et al⁸ showed that better knowledge in hypertension self-management was linked to more normal blood pressure

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Received: March, 2026
Reviewed: April, 2026
Accepted: May, 2026

values. Although these findings emphasize the importance of knowledge in shaping self-management, assessment of this relationship remains important in different clinical and cultural settings. Therefore, the present study aims to assess the level of knowledge about hypertension among hypertensive patients attending selected public health clinics in Al-Diwaniyah City, evaluate their self-management behaviors related to medication adherence, diet, physical activity, blood pressure monitoring, and follow-up care, and examine the relationship between patients' knowledge of hypertension and their self-management practices.

METHODS

This descriptive cross-sectional study was conducted at Al Diwaniyah City, located in Diwaniyah Governorate, Iraq from 16th October 2025 to 1st March 2026 vide letter No. 3434/QM/Approval/JSDJNEHU dated 1st October 2025. The study was comprised of four public health care clinics, namely Al-Intifada Public Clinic,

Al-Furat Public Clinic, Al-Talia Public Clinic, and Al-Iskan Al-Qadeem Public Clinic. A total of 165 hypertensive patients were enrolled. Participants came from four public clinics in Al-Diwaniyah City: 65 patients were selected from Al-Intifada Public Clinic, 28 patients were selected from Al-Furat Public Clinic, 34 patients were selected from Al-Talia Public Clinic, and 38 patients were selected from Al-Iskan Al-Qadeem Public Clinic. Sample size was determined with the Neuman formula. The data was entered and analyzed through SPSS-25.

RESULTS

The patients had an overall high level of knowledge regarding hypertension with a general mean of 2.61±0.649. The highest knowledge scores were found in items related to lifestyle risk factors and healthy behaviors, particularly the harmful effect of smoking on hypertension (98.8%, mean=2.98±0.174),

Table No. 1: Response of patient knowledge regarding hypertension (n=165)

| Item | I know | | I uncertain | | I don't know | | Mean±SD | Assessment |
|----------------------------------------------------------------------------------------------------------------------------------------------------|--------|------|-------------|------|--------------|------|-----------|------------|
| | No. | % | No. | % | No. | % | | |
| Hypertension is a serious condition that can lead to complications | 93 | 56.4 | 6 | 3.6 | 66 | 40.0 | 2.16±0.97 | Moderate |
| An individual with hypertension should go for check-ups regularly | 141 | 85.5 | 2 | 1.2 | 22 | 13.3 | 2.72±0.68 | High |
| It is important for a patient with hypertension to have a reliable means of blood pressure monitoring between visits to their health care provider | 111 | 67.3 | 14 | 8.5 | 40 | 24.2 | 2.43±0.85 | High |
| A blood pressure level of above 130/90 is considered abnormal | 69 | 41.8 | 27 | 16.4 | 69 | 41.8 | 2.0±0.91 | Moderate |
| A blood pressure level of less than 120/80 is considered to be normal | 112 | 67.9 | 14 | 8.5 | 39 | 23.6 | 2.44±0.85 | High |
| Smoking cigarettes has a negative effect on persons with hypertension. | 163 | 98.8 | 1 | 0.6 | 1 | 0.6 | 2.98±0.17 | High |
| Drinking alcohol has a negative effect on persons with hypertension. | 157 | 95.2 | 3 | 1.8 | 5 | 3.0 | 2.98±0.17 | High |
| Increased physical exercise actually decreases the blood pressure of a person with hypertension. | 142 | 86.1 | 5 | 3.0 | 18 | 10.9 | 2.92±0.36 | High |
| A diet which contains fruits and vegetables is good for a person with hypertension. | 155 | 93.9 | 6 | 3.6 | 4 | 2.4 | 2.75±0.63 | High |
| A diet consisting of low-fat milk and whole wheat bread is good for a person with hypertension. | 149 | 90.3 | 5 | 3.0 | 11 | 6.7 | 2.92±0.35 | High |
| Corned beef and salted meat is harmful for a person with hypertension. | 151 | 91.5 | 0 | 0.0 | 14 | 8.5 | 2.84±0.52 | High |
| A meal rich in green bananas, baked chicken and beans is good for a person with hypertension. | 102 | 61.8 | 16 | 9.7 | 47 | 28.5 | 2.83±0.55 | Moderate |
| Overall mean±SD | | | | | | | 2.61±0.64 | High |

the harmful effect of alcohol (95.2%, mean=2.92±0.366), the benefit of fruits and vegetables (93.9%, mean=2.92±0.356), and the harmful effect of corned beef and salted meat (91.5%, mean=2.83±0.559). A high proportion of respondents also knew that hypertensive patients should attend regular check-ups (85.5%, mean=2.72±0.686), that physical exercise can reduce blood pressure (86.1%, mean=2.75±0.638), and that low-fat milk and whole wheat bread are good dietary choices (90.3%, mean=2.84±0.521). In contrast, only moderate knowledge was observed in some important clinical areas. Just 56.4% knew that hypertension is a serious condition that can lead to complications (2.16±0.971), while knowledge of diagnostic blood pressure thresholds was limited, as only 41.8% identified that blood pressure above 130/90 mmHg is abnormal and an equal proportion (41.8%) did not know this item (2.00±0.917). Knowledge was also moderate regarding specific healthy meal composition, with 61.8% recognizing that a meal rich in green bananas, baked chicken, and beans is appropriate for patients with hypertension (2.33±0.893) [Table 1].

Table 2 demonstrates that the general knowledge of hypertension among the patient population was mainly favorable. There were 135 (81.8%) had good knowledge scores in the range of 29–36; 27 (16.4%) had fair knowledge scores in the range of 21–28; only 3 (1.8%) had low knowledge scores in the range of 12–20. There was a large average knowledge score of 30.89 with a standard deviation of 3.59, which is a high level of knowledge of hypertension in respondents. This indicates that most patients understood hypertension, its management, and self-care behaviors are important to consider, while a smaller percentage of participants did not seem to know enough and might need more health education. The current finding that knowledge among the hypertensive patients was generally good is consistent with many previous studies which demonstrate that patient knowledge is an important cornerstone of hypertension self-management.

Table No. 2: Overall patient knowledge regarding hypertension

| Level | No. | % | Mean | St. deviation |
|----------------------------|-----|------|-------|---------------|
| Low level 12-20 | 3 | 1.8 | 30.89 | 3.59 |
| Fair knowledge 21-28 | 27 | 16.4 | | |
| Good knowledge 29-36 | 135 | 81.8 | | |

Most respondents had fair self-care behavior, with 127 respondents (77.0%) falling in this category. Meanwhile, 35 respondents (21.2%) had good self-care behavior and only 3 respondents (1.8%) had poor self-

care behavior. The overall mean self-care score was 42.59 with a standard deviation of 5.85, indicating that, on average, respondents were in the fair category (Table 3).

Table 3: Overall sample response regarding self-care behavior

| Level | Score Range | No. | % | Mean | St. deviation |
|------------|-------------|-----|------|-------|---------------|
| Poor level | 20–33.33 | 3 | 1.8 | 42.59 | 5.85 |
| Fair level | 33.34–46.66 | 127 | 77.0 | | |
| Good level | 46.67–60 | 35 | 21.2 | | |

DISCUSSION

This study suggested that the knowledge of behavioral and dietary risk factors was higher compared to the clinical severity and diagnostic information regarding hypertension. The knowledge level being generally high indicates that most patients understand basic hypertension management concepts, especially those of smoking cessation, reduction of alcohol consumption, exercise, healthy diet, and ongoing follow-up. This trend is not different from previous studies which have found that a knowledge of disease is an important factor in the improvement of self-efficacy and self-management of hypertensive patients.² The relatively high levels of knowledge found in lifestyle-related items can be consistent with a focus on non-pharmacological management in health education at primary care level. Other studies have demonstrated that better knowledge may help to advance treatment adherence and self-management as well as blood pressure control in the study setting, coupled with supportive health care provision.⁷ Knowing also significantly supports blood pressure outcomes as well since enhanced knowledge was associated with improvements in blood pressure control.⁸ However, significant gaps are also seen in the current table, especially with the characterization of hypertension as a serious condition and abnormal blood pressure measurement. Such weaknesses are significant because poorly defined information on the degree of disease and target blood pressure can reduce patients' ability to faithfully monitor their condition and respond appropriately to indications.

The moderate knowledge in some domains also indicates that knowledge itself does not necessarily guarantee appropriate self-management conduct. This supported this interpretation in past studies reporting that even though patients might have learned enough knowledge, having self-care behavior is not always linked to knowledge, which can be influenced by other factors such as motivation, self-efficacy, employment status, age, and social support.^{2,9} The same qualitative evidence revealed self-management practices among

hypertensive patients, which are limited not only by knowledge but are shaped and facilitated as well by daily barriers like fatigue, medication side effects, long treatment duration, and the availability of resources (family and health-worker support).³ Safitri et al⁵ reported likewise that most hypertensive patients showed only a moderate degree of self-management capability, indicating room for improving patients' awareness even when there is awareness. There also existed evidence from Nepal at the community level where less than half of adults had good knowledge about hypertension, and it was evident that awareness-raising activities and education programs needed to be implemented.¹⁰⁻¹² Therefore, the current study imply that educational interventions for hypertensive patients should move beyond general advice and place greater focus on clinical understanding, including blood pressure thresholds, complications, and practical dietary planning, while also reinforcing motivation, self-efficacy, and social support to improve long-term self-management outcomes.

Martin et al⁶ stated that most hypertensive patients had good knowledge, and higher knowledge was positively correlated with self-management practices ($r=0.320$, $p=0.000$), thus indicating better-informed patients are more likely to undertake appropriate self-care. Similarly, Satyal et al¹³ reported that 57.5% of patients had adequate knowledge and that knowledge was related to improved self-care practice ($r=0.209$, $p=0.002$). The relatively higher proportion of good knowledge (81.8%) in the current study may reflect differences in setting, patient exposure to health information, or access to health services. This finding is even greater than the one provided by Basnet et al¹⁰ where only 44.4% of adults had good knowledge of hypertension, which indicates the variation in knowledge across different populations and contexts. In addition, Rikmasari et al² found that knowledge on disease was one of the most important predictors of self-efficacy and self-management, while better self-management was related to controlled blood pressure and improved health-related quality of life. This is in accordance with the knowledge that knowledge not only facilitates greater understanding, but also indirectly influences better clinical outcomes through increased confidence and healthier day-to-day living. Nevertheless, this is not a consistent relationship, as Sari et al⁹ reported that 53.9% of the patients had sufficient knowledge and 53% had a satisfying level of self-care; however, the relationship between the knowledge and self-care was not significant ($p=0.099$, $r=0.155$). This might highlight that what individuals know alone may not be enough, and that other influences, like motivation, social support, and self-efficacy can augment knowledge.

This interpretation is strengthened by Asmoro et al⁸, who found that both knowledge and motivation were

significantly related to blood pressure control, and by Kurt and Gurdogan⁷, who demonstrated that self-management support improved knowledge, treatment adherence, self-care, and blood pressure outcomes. Therefore, while the high level of knowledge found in this study is encouraging, ongoing education and supportive interventions remain necessary to translate knowledge into sustained self-management behaviors among hypertensive patients.

In the present study self-management among hypertensive patients in this study was generally adequate but not yet optimal, because the majority had not reached the good category of self-care behavior. The predominance of fair self-care behavior suggests that most hypertensive patients were able to perform some components of self-management, but their practices may not have been sufficiently consistent to achieve a good level (Table 3). This pattern is in line with Safitri et al⁵, who found that 85% of hypertensive patients had sufficient self-management, with weaknesses particularly in self-integration, self-regulation, and blood pressure monitoring. The present findings may also reflect the important role of knowledge in shaping self-management behavior, as several of the attached studies showed that better knowledge was associated with better self-care or self-management. Martin et al⁶ reported a positive correlation between knowledge and hypertension self-management practice, while Gusty et al⁴ found that knowledge was significantly related to adherence in weight management and physical activity. Similarly, Rikmasari et al² identified disease knowledge as the strongest factor associated with both self-efficacy and self-management and showed that patients with better self-management were more likely to have controlled blood pressure and better health-related quality of life. In addition, self-efficacy and motivation appear to strengthen self-management performance. Hadibrata et al¹⁴ and 15 found a significant positive relationship between self-efficacy and self-care management, while Asmoro et al⁸ showed that higher knowledge and motivation were significantly associated with better blood pressure outcomes. Supportive interventions also seem important, because Kurt and Gurdogan⁷ demonstrated that self-management support significantly improved knowledge, treatment adherence, self-care management, and blood pressure control. Qualitative evidence from Nurarifah and Damayanti³ further suggests that diet, physical activity, medication adherence, blood pressure checks, smoking behavior, and social support are key dimensions influencing hypertension self-management. Therefore, the high proportion of respondents in the fair category in this study may indicate that patients possess a basic level of self-care ability, but still require stronger education, motivation, self-efficacy enhancement, and family or health-worker support to improve their self-

management to a good level and ultimately achieve better blood pressure control.¹

CONCLUSION

The hypertensive patients can only improve outcomes when there is greater education on hypertension, which must go both hand in hand with education about complications and blood pressure thresholds, and the provision of ongoing information and continuous counselling, motivation, behavioral support and follow-up. Strengthening these areas could assist patients to translate knowledge into routine practice for better daily lifestyle for achieving better blood pressure control and decreased risk of adverse events.

Author's Contribution:

| | |
|------------------------------------------------------------------------|----------------------------------|
| Concept & Design or acquisition of analysis or interpretation of data: | Hasanain Mahmood Abdoul Ameer |
| Drafting or Revising Critically: | Hasanain Mahmood Abdoul Ameer |
| Final Approval of version: | The above author |
| Agreement to accountable for all aspects of work: | The above author |

Conflict of Interest: The study has no conflict of interest to declare by any author.

Source of Funding: None

Ethical Approval: No. 3434/QM/Approval/JSDJNEHU Dated 01.10.2025

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