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Original Article

Awareness: the Golden Key to Understanding Healthcare Seeking Behavior among Elderly Hypertensive Patients in Taft, Iran

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Introduction: Healthcare seeking behavior is crucial for early detection and proper management of hypertension in the elderly. This study investigated the factors influencing healthcare seeking behavior among elderly hypertensive patients residing in Taft, Iran.

Methods: This cross-sectional study recruited 230 hypertensive individuals aged 60 and above residing in Taft, Yazd Province, Iran. Participants were randomly selected and completed a questionnaire through face-to-face interviews. The questionnaire assessed their healthcare seeking behaviors and potential influencing factors. Data analysis was performed using SPSS software. Correlation tests and linear regression analysis were employed to identify significant relationships ($p < 0.05$).

Results: A significant majority (70%) of participants reported always paying attention to symptoms of high blood pressure. When experiencing symptoms, over half (53.9%) of the participants indicated a preference for visiting health centers, general practitioners' offices, or emergency departments. Among the factors studied, awareness ($B = 0.228$) emerged as the most significant positive predictor of healthcare seeking behavior ($p < 0.05$). Other positive influences included decision-making autonomy ($B = 0.177$), prior experience with healthcare services ($B = 0.131$), and social support ($B = 0.131$) – all statistically significant at $p < 0.05$. Conversely, barriers to healthcare seeking had a negative and significant impact ($B = - 0.064$, $p < 0.05$). Collectively, the investigated factors explained 23% of the variation observed in healthcare seeking behavior among the elderly participants ($R^2 = 0.23$).

Conclusion: This study identified awareness of hypertension as the strongest predictor of healthcare seeking behavior in elderly patients. Additionally, providing accessible and supportive healthcare services can further encourage elderly hypertensive patients to seek necessary care.

Keywords: Health Care Seeking Behavior**,** Blood Pressure, Awareness, Aged

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Introduction

Healthcare-seeking behavior refers to the actions individuals take to address perceived health concerns and achieve overall well-being (1). Treatment-seeking behavior is a subset of healthcare-seeking behavior (2, 3). It involves a wide range of activities, from utilizing the conventional healthcare system (visiting general practitioners, specialists, emergency rooms, or hospital clinics) to exploring alternative therapies (traditional medicine, herbal remedies, self-treatment) (4). Interestingly, treatment-seeking behavior can also encompass decisions like following non-professional advice, prematurely stopping treatment, or even neglecting healthcare altogether (4).

Extensive research suggests that several sociodemographic and access-related factors can influence healthcare-seeking behavior. These include age, gender (5), social status of women in certain cultures, type of disease, access to services and quality of services, income level, patient's place of residence (particularly in rural areas with limited access to specialists (6). Additionally, family composition and the availability of financial support for healthcare (7), health insurance coverage (8) as well as family support (9) can play a significant role. Studies have also shown that certain lifestyle factors can negatively impact healthcare-seeking behavior. For instance, excessive alcohol consumption or smoking (10), dependence and loneliness (11) can delay healthcare-seeking behavior.

Studies suggest the factors influencing healthcare-seeking behavior related to perceptions and social influences. A person's perception of their illness can significantly influence their decision to seek healthcare. This includes factors like the perceived sensitivity and severity of the disease (2, 12), their perception of the disease itself (13), and their awareness of the disease (14). Social factors can also play a significant role. This can include social values and beliefs about the disease (15), past experiences with healthcare providers influencing future behavior (10), and the evaluation of healthcare providers from the perspective of consumers (16). The strength of social support networks can also be a factor. Social support from family and friends (17, 18) and a sense of autonomy in healthcare decision-making (19) can all influence healthcare-seeking behavior.

Untreated hypertension is a leading preventable cause of illness and death, especially among older adults. Early detection and treatment with antihypertensive medications are crucial for preventing cardiovascular diseases. However, healthcare-seeking behavior in the elderly is often hampered by factors such as decreased physical endurance, social isolation, cognitive decline, dependence, loneliness, and economic instability (11). Research suggests several factors can encourage healthy behaviors in older adults with high blood pressure. A study in Indonesia found that education, knowledge, self-efficacy (confidence in managing one's health), and social support all significantly influence health-promoting behaviors (20). For example, high-quality education was linked to a greater likelihood of adopting healthy habits (20). However, several patient-related barriers can hinder successful hypertension management in the elderly. A study in Nigeria identified key challenges, including limited knowledge about the disease and its consequences, unrealistic treatment expectations, difficulty sticking to medication regimens (medication non-adherence), and lack of awareness about the importance of lifestyle modifications (21).

This study focuses on Taft City, where hypertension is a critical public health concern. In the second half of 2020, a significant portion (94.33%) of the elderly population (itself representing 20.41% of the total population) was diagnosed with high blood pressure. Given this high prevalence, this research aimed to investigate the healthcare-seeking behaviors of Taft City's elderly residents with hypertension and the factors influencing those behaviors.

Methods

Study design and participants

This cross-sectional study investigated healthcare-seeking behaviors among elderly hypertensive patients in Taft City, Iran. A total of 230 participants aged 60 years and above, diagnosed with hypertension by a physician, were recruited. Participants were registered in the SIB system (Integrated Health Care System in Iran) and covered by healthcare services provided by two urban Comprehensive Health Care Centers in Taft City. Simple random sampling was employed to select participants from each center. Healthcare providers at the centers contacted the selected individuals and invited them to visit the Comprehensive Health Care Center for blood pressure care.

Data collection

A questionnaire was administered to each participant via face-to-face interviews. For participants unable to visit the center due to physical limitations or lack of accompaniment, telephone contact was made to obtain verbal consent. Following written consent, the face-to-face interviews were conducted at their homes. The study recruited participants who met the following criteria: written informed consent to participate, a documented diagnosis of hypertension for at least a year, residency in Taft City for at least six months prior to the interview, demonstrably able to understand and respond to the interview questions,

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and free from Alzheimer's disease or other cognitive impairments as confirmed by documented mental health screenings within the SIB system at the Comprehensive Health Care Centers.

Data collection tools

The study employed a researcher-developed questionnaire with four sections:

Demographics: This section collected information on participants' age, gender, marital status, number of children, housing ownership, living arrangements, employment status, health insurance coverage (both primary and supplemental), monthly household income, and smoking habits.

Hypertension characteristics: This section focused on hypertension-related details. Participants were asked about the duration of their diagnosis, the date of their most recent blood pressure measurement before the study, their current blood pressure reading, and whether they owned a blood pressure measuring device at home. Additionally, questions addressed who typically measured their blood pressure, the symptoms they experienced with high blood pressure, any history of hospitalization due to hypertension, and any co-occurring medical conditions.
The participant categorization for hypertension registration in the SIB system aligned with the Ministry of Health's established guidelines for blood pressure classification (22), which served as the criteria for hypertension categorization in this study. The classification categorized participants into the following groups:

- Normal: Systolic BP < 120 mmHg and Diastolic BP < 80 mmHg
- Stage 1 Hypertension: Systolic BP 140-159 mmHg or Diastolic BP 90-99 mmHg
- Stage 2 Hypertension: Systolic BP ≥ 160 mmHg or Diastolic BP ≥ 100 mmHg

Healthcare-Seeking Behavior: This section assessed healthcare-seeking behavior by asking participants about attention to symptoms of increased blood pressure, preferred referral source for blood pressure control, medication adherence (regular use of drugs), adherence to doctor-recommended follow-up appointments, additional self-management practices to control blood pressure, sources of information about hypertension (radio, television, doctor, healthcare workers, family members).

Factors Associated with Healthcare-Seeking Behavior: The study also explored factors influencing healthcare-seeking behavior through a six section. This section measured participants' awareness of disease management strategies (6 question), understanding of hypertension itself (3 question), prior experience with healthcare (4 question), perceived barriers to seeking care (7 question), level of autonomy in healthcare decision-making (3 question), and the level of social support received from doctors, healthcare workers and family members (9 question).

The instrument was meticulously designed based on a comprehensive review of relevant research. A panel of experts in medicine, sociology, and health education evaluated the questionnaire to ensure its content validity (reflecting the intended concept) and face validity (clearness and appropriateness). To ensure item clarity, a pilot study involving interviews with participants was conducted. Feedback from these interviews informed revisions to the questionnaire, enhancing its understandability. The instrument's reliability (internal consistency) was assessed in a preliminary study with 26 eligible elderly individuals. Cronbach's alpha coefficients confirmed good internal consistency for all constructs included perceived severity of illness (0.90), prior experience with healthcare services (0.89), decision-making autonomy in healthcare seeking (0.98), barriers to healthcare seeking (0.79) and social support (0.86).

Statistical analysis

After data collection, it was entered into SPSS 16.0 software and analyzed using descriptive statistics (mean, standard deviation) to understand the characteristics of the data. The relationship between the variables was further explored using backward stepwise regression analysis. Only statistically significant relationships ($p < 0.05$) were considered.

Ethical considerations

This article stems from a thesis (ethics code: IR.SSU.SPH.REC.1397.162) approved by institutional research committee, School of Public Health, Shahid Sadoughi University of Medical Sciences. To ensure ethical compliance, informed consent (both oral and written) was obtained from participants. The confidentiality of their personal details and responses was emphasized by the researcher.

Result

The majority of participants were women (54.3%) and aged 60-64 years (40%). Most were married (77.4%) and had at least some college education (20.9%). They often had 4-5 children (43%), lived with their spouse (49.1%), and owned their own home (95.7%). Nearly all participants (97.4%) had health insurance, and more than half had supplemental insurance (59.6%). (Table 1)

The average duration of hypertension in this elderly population was 9.24 years (with a standard deviation of 6.61 years). The average systolic blood pressure at the time of the study was 130.4 mmHg (with a standard deviation of 14.6 mmHg) diastolic blood pressure was 79.4 (with a standard deviation of 8.1 mmHg). (Table 2)

Table 3 describes how participants sought healthcare. Seventy percent of the elderly participants reported monitoring themselves for symptoms of high blood pressure. The most common response to high blood pressure symptoms

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was visiting a health center (23.5%). Visits to general practitioners and emergency rooms were less common (17.4% and 13%, respectively). None of the participants reported using traditional medicine specialists. Medication adherence was high, with 67.8% reporting always taking their medication as prescribed. Only 2.2% reported irregular medication use. Additionally, over two-thirds (73.5%) of participants reported getting their blood pressure checked according to their doctor's recommendations. Diet was the most frequently reported non-drug approach to managing blood pressure (84.3%).

Table 4 shows the average score for healthcare seeking behavior and its correlates in elderly participants.

The results of a statistical model (linear regression model) to explore the factors influencing how participants sought healthcare is detailed in table 5. The model found that higher levels of awareness, independence in decision-making, experience with previous healthcare, and social support were all associated with increased scores on the healthcare seeking behavior scale (these increases were 0.364, 0.187, 0.374, and 0.072 units, respectively, for each unit increase in the factor). Conversely, encountering more barriers to healthcare decreased the score (by 0.064 units for each unit increase in barriers). Overall, the factors included in the model explained 23% of the variation observed in healthcare seeking behavior (R-squared = 0.48).

Table 1. Demographic characteristics of elderly participants (n = 230)

Variable	Variable levels	N (%)	Variable	Variable levels	N (%)
Gender	Female	125 (54.3)	Living arrangements	With spouse	113 (49.1)
				With spouse and unmarried children	52 (22.6)
				Without spouse, with Married children	8 (3.5)
	Male	105 (45.7)		Without spouse, with unmarried children	13 (5.7)
				With spouse and married children	10 (4.3)
				Living alone	33 (14.3)
Age group (Year)	60-64	92 (40)	Occupation	Employed	15 (6.5)
	65-69	65 (28.3)		Housewife	110 (37.8)
	70-74	42 (18.26)		Unemployed	4 (1.7)
	75-79	18 (7.8)		Has income without work	16 (7)
	80 and above	13 (5.7)		retired	85 (37)
Marital status	Married	178 (77.4)	Health insurance	Has insurance	
	Widowed	50 (21.7)			224 (97.3)
	Divorced	1 (0.4)			
	Never married	1 (0.4)		No insurance	6 (2.6)
Education level	Illiterate	39 (17)	Supplemental insurance	Has supplemental insurance	
	Can read and write	16 (7)			137 (59.6)
	Primary school	73 (31.7)			
	Middle school	13 (5.7)			
	High school	8 (3.5)		No supplemental insurance	93 (40.4)
	Diploma	33 (14.3)			
	Above Diploma	48 (20.9)			
Number of imprisonments	0-3	91 (39.6)	Monthly household income	Less than 1 million tomans	26 (11.3)
	4-5	99 (43)		1-2 million tomans	95 (41.3)
				2-3 million tomans	99 (43)
	6 and more	40 (17.4)		More than 3 million tomans	10 (4.3)
Housing ownership	Owned	220 (95.7)	Tobacco use	Yes	24 (10.4)
	Rented	4 (1.7)			
	Living with children	6 (2.6)		No	206 (89.6)
	Other	0			

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Table 2. Mean score of clinical indicators related to blood pressure in elderly participants (n = 230)

Variable	Minimum	Maximum	Mean	Standard deviation
Duration of hypertension (years)	1	40	9.24	6.61
Systolic blood pressure (mmHg)	90	193	130.49	14.69
Diastolic blood pressure (mmHg)	60	130.49	79.43	8.107
Weight (kg)	32	125	72.98	11.96
Height (cm)	144	184	161.82	9.19
Body mass index (BMI)	13.66	42.05	27.87	4.17

Table 3. Frequency distribution of healthcare seeking behaviors in elderly participants (n = 230)

Variable	Variable levels	N	%
Attention to symptoms of increased blood pressure	Yes, always	163	70.9
	Yes, sometimes	55	23.9
	No	12	5.2
Preferred referral source for blood pressure control	General practitioner's office	40	17.4
	Health center	54	23.5
	Emergency room	30	13
	Hospital clinic	9	3.9
	Specialist's office	17	7.4
	Pharmacy without a prescription and without consulting the staff	27	11.7
	Pharmacy without a prescription but with staff consultation	1	0.4
	Traditional medicine practitioner	0	0
	Traditional healer	3	1.3
	Herbalist's shop	1	0.4
	I do not go anywhere	76	33
Medication adherence (regular use of drugs),	Yes, always	156	67.8
	Yes, sometimes	69	30
	No	5	2.2
Adherence to doctor-recommended follow-up appointments	Yes	169	73.5
	No	61	26.5
Additional self-management practices to control blood pressure	Diet	194	84.3
	Physical activity	67	29.1
Sources of information about hypertension	Radio	9	3.9
	Television	83	31.6
	Health center staff	113	49.1
	doctor	157	68.3
	Children and relatives	38	16.5
	Friends and neighbors	17	7.4
	Social media	19	8.3
	Other	7	3

Table 4. Mean score of healthcare seeking behavior and its correlates in elderly participants (n = 230)

Variable	Mean	Standard deviation
Healthcare seeking behavior	7.00	1.82
Awareness	4.86	1.14
Understanding of the disease	5.81	0.683
Prior experience with healthcare services	3.74	0.640
Barriers to seeking healthcare	6.12	3.93
Autonomy in healthcare decision-making	4.54	1.73
Social support	14.80	3.30

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Table 5. Multiple regression coefficients for predicting factors associated with healthcare seeking behavior in elderly participants (n = 230)

Variable	Regression coefficient β	Standardized error of regression coefficient	Standardized coefficient	t	p	Tolerance	VIF*
Constant value	2.310	0.965	–	3.417	0.016	–	–
Prior experience with healthcare services	0.374	0.177	0.131	2.018	0.036	0.186	1.129
Barriers to seeking healthcare	-0.064	0.030	-0.138	-2.155	-0.032	0.834	1.2
Autonomy in healthcare decision-making	0.187	0.065	0.177	2.879	0.004	0.905	1.105
Social support	0.072	0.035	0.131	2.091	0.038	0.876	1.142
Awareness	0.364	0.105	0.228	3.480	0.001	0.798	1.253
Understanding of the disease	0.051	0.161	0.019	0.317	0.751	0.954	1.048

* Variance Inflation Factors (VIF) for assessing multi Collinearity in a Multiple Regression Model

Discussion

This study investigated the predictors of healthcare-seeking behavior among older adults with hypertension in Taft City, Iran. Our study found that older adults preferred health centers most for their care, followed by general practitioners' offices and then emergency departments. This differs from a study by Borhaninejad et al., where specialists' offices were the most common place for outpatient care among older adults. The reason for visits in that study was often musculoskeletal conditions (23). In our study, the preference for public sector services by older adults might be due to financial limitations caused by reduced ability to work, retirement, or lower income.

The findings of the present study showed that most older adults kept their appointments for blood pressure monitoring and took their blood pressure medications as prescribed. A logical understanding of the disease may help reduce anxiety and stress in older adults with hypertension when they face unexpected health problems. This can help regulate medication use and doctor visits, leading to better adherence to treatment overall (13). In contrast, a related study in Indonesia found that more than half of the participants did not attend regular monthly checkups because of musculoskeletal problems, even though the services were free (24).

This study found that understanding how to control blood pressure was the most important factor influencing older adults with hypertension to seek healthcare. This is supported by research from Esmaeili Ahangarkolaei et al., who showed educational programs can improve self-care behaviors in this population (25). Further evidence comes from a clinical trial where educational interventions significantly lowered both systolic and diastolic blood pressure readings in patients with hypertension (26). While some studies, like the one by Poormuhamad and Jalili, haven't found a direct link between awareness and self-care behavior (27), our findings suggest that well-designed educational programs that teach older adults about blood pressure management can likely improve their healthcare-seeking behavior.

The current study identified decision-making autonomy as the second most influential factor impacting healthcare-seeking behavior among older adult participants. Decision-making autonomy in healthcare utilization empowers individuals to actively seek healthcare. A study by Alemayehu and Meskele found that over half of women had autonomy in decision-making regarding healthcare utilization related to reproductive services. Factors influencing decision-making autonomy in healthcare utilization related to women included employment, husband's education, family income, and number of family members (19).

This study found that positive experiences with past healthcare were the third most important factor influencing participants' willingness to seek future care. This suggests that positive interactions with the healthcare system can encourage individuals to be more proactive in seeking care when needed. Other studies support this finding. For example, research by Green et al., identified factors that facilitate healthcare utilization, such as welcoming staff, collaborative relationships with providers, and education about the value of preventive care (10). Similarly, Bahrami et al., demonstrated a significant association between positive perceptions of healthcare providers and patients' likelihood of seeking treatment (16).

This study also revealed a significant correlation between social support and healthcare-seeking behavior. These findings align with those of Osamor's research on social support and blood pressure management (18). In Osamor's study, individuals who received greater social support from their families and friends exhibited better blood pressure control (18). Family support and elder care systems can serve as catalysts for healthcare-seeking motivation among this population group. Individuals with higher levels of social support tend to seek healthcare more proactively. A related study conducted in Egypt highlighted the significant role of spouses in encouraging women to seek healthcare, while the influence of mothers

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on women's healthcare-seeking behavior was not as substantial (17). Movahedmajd and Jahanbazian's study further suggests a significant association between social support and self-rated health (28).

This study highlights the detrimental impact of perceived barriers to healthcare seeking on older adults' healthcare-seeking behaviors. These findings underscore the importance of addressing these barriers to promote better healthcare access and outcomes for this vulnerable population. While this study's findings contradict those of Poormuhamad and Jalili (27), who found no association between perceived barriers and self-care behaviors in older adults, they align with Mirhoseni et al.'s research (29). In their study, perceived barriers were positively and significantly correlated with blood pressure levels.

Related studies have identified patient-related barriers to hypertension control, such as high costs, lengthy waiting times, cumbersome care procedures (10), poor knowledge of hypertension and its consequences, unrealistic treatment expectations, poor medication adherence, lack of awareness about lifestyle modifications, and inability to make lifestyle changes (21). Other barriers, such as financial constraints, distance, and transportation difficulties, have been identified as hindering healthcare access for low-income older adults, while these issues are often not considered significant enough for high-income individuals (30). Addressing these perceived barriers is crucial for improving healthcare access and outcomes among older adults.

Conclusion

In this study, awareness, decision-making autonomy, previous experience of receiving healthcare, and strong social support were the strongest predictors of healthcare-seeking behavior in older adults with hypertension. These variables, along with perceived barriers, collectively explained a significant portion of the variance in this behavior. The findings suggest that intervention programs focused on Increasing older adults' awareness of the importance and proper management of hypertension, empowering them to make independent decisions about their healthcare, improving their previous experiences in the healthcare system, and strengthening their social support networks can effectively help to increase healthcare-seeking behavior in older adults with hypertension.

Study limitations

This study's strength lies in its exploratory approach to developing the tool. Researchers conducted interviews with multiple hypertensive elderly individuals to ensure the questionnaire items comprehensively captured their care-seeking behaviors and related factors. This approach enhances the tool's validity and effectiveness in measuring care-seeking behaviors in this population. Due to the robust approach taken in designing this tool, it can be applied in similar studies aiming to investigate care-seeking behaviors in hypertensive elderly individuals or other chronic disease populations.

The present study has limitations due to its cross-sectional design and reliance on interviews for data collection. A longitudinal study would be better suited to understand the relationships between variables over time. Additionally, interviewing elderly participants can introduce recall bias, where participants may forget or misremember their care-seeking behaviors. They may also be inclined to report their behaviors in a more positive light. To mitigate this bias, future studies could employ alternative data collection methods such as observation or diary records.

Conflict of interest

The authors declare that they have no conflicts of interest regarding the conduct of this research and the publication of this article.

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Authors' contribution

- Conceptualization and study design: Masoumeh Abbasi- Shavazi, Mandana Pirooz and Sara Jambarsang;
- Data analysis, data interpretation and writing the original draft: Mandana Pirooz, Sara Jambarsang, Masoumeh Abbasi-Shavazi, Maliheh Alimondegari and Mohsen Mirzaei
- Final approval: All authors.

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