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Article

Assessment of Health Awareness Concerning Hypertension among Visitors to Primary Health Care Centers

Entisar Khaleel Sameen*[1], Shaymaa Hadi Najm[2]

1,2. Department of Community Health, Medical-Technical Institute, Baghdad Middle Technical University, Iraq

* Correspondence: entisar@mtu.edu.iq

Abstract: High blood pressure is a major public health problem globally and locally and is a major risk factor for cardiovascular disease, kidney failure, and stroke. Raising health awareness among community members is a crucial step toward prevention and early detection of the disease. This study aims to assess the level of health awareness about hypertension among healthcare center visitors, identify their sources of information, and identify knowledge gaps. A descriptive cross-sectional study was conducted on a randomly selected sample of health center visitors. Data were collected using a structured questionnaire that included demographic information (age, gender, educational level, marital status), in addition to questions measuring general knowledge of risk factors, symptoms, complications, prevention, and treatment methods. The results showed that the most representative group was middle-aged (30 to 50) years old and that the majority of participants were female. The most common educational level was secondary education, while most participants were married. Regarding the level of knowledge, it was found that more than a third of participants had good knowledge (37.6%), while the level of knowledge was average for 35.6% and weak for 25.7%. The results also showed that the Internet was the most relied-upon source of information (44.6%), while participants relied less on health personnel and traditional media. The results indicated a statistically significant relationship between each of these. Age and educational level Educational level was associated with knowledge level (p=0.014) (p<0.001), respectively However, gender did not show any significant relationship. These results indicate that older age and higher educational level are associated with better knowledge about hypertension. These results highlight the need for regular educational awareness programs in healthcare facilities to raise awareness about high blood pressure, with a particular focus on the least educated and most vulnerable groups.

Keywords: High Blood Pressure, Health Awareness, Health Centers, Risk Factors

1. Introduction

Hypertension is one of the most important and common public health problems worldwide. It is often called the "silent killer" because it often develops without any obvious symptoms, making it undiagnosed in a large percentage of patients until it reaches an advanced stage [1]. This disease is characterized by a persistent increase in arterial blood pressure, with the normal rate being more than 190/140 mmHg according to the recommendations of the World Health Organization. This leads to an increased burden on the cardiovascular system and the occurrence of serious pathological changes if it is not controlled early and effectively [2]. Recent statistics indicate that more than 1.28 billion adults worldwide suffer from high blood pressure, about two-thirds of whom live in low- and middle-income countries. Despite the availability of diagnostic and treatment

methods, less than half of those affected receive a medical diagnosis, and the percentage of those who receive regular treatment reaches a satisfactory level of control is less than 25% in many countries [3]. These facts make high blood pressure one of the main causes of premature death worldwide, as it is directly linked to increased rates of coronary heart disease, stroke, kidney failure, and retinal diseases [4], [5]. At the regional level, high blood pressure poses a growing health challenge in Middle Eastern countries, including Iraq, where several factors contribute to the high rates of infection, the extent of demographic changes, the increase in obesity rates, the adoption of unhealthy dietary patterns rich in fats and salts, in addition to the lack of physical activity and the increase in smoking rates. Some local studies indicate that the rate of high blood pressure in Iraq is close to the rates recorded in other countries. Another developing country, which is what rejects an additional burden on the health system, which is already suffering from multiple challenges. The danger of high blood pressure lies not only in the prevalence of its complications, but also in the weak health awareness among individuals about the disease [6], [7]. Many patients lack sufficient knowledge about the causes of the disease, risk factors, possible symptoms, and long-term complications. Adherence to treatment and healthy lifestyles is often affected by the level of awareness and health culture of the patient. Previous studies show that raising the level of health awareness contributes significantly to preventing the disease or delaying its onset [8], [9]. The disease helps diagnosed patients improve blood pressure control and adhere to the treatment plan. Primary health centers play a pivotal role in promoting health types in the community, as they represent the first point of contact between the citizen and the health system [10], [11], [12]. These centers are the ideal place to implement educational programs about high blood pressure, given that they receive wide segments of society with different age, educational, and economic levels [13], [14] By taking advantage of this opportunity, a solid knowledge base can be built that helps reduce the spread of the disease. And its complications, in addition to reducing the financial burden on the health system as a result of treating advanced and complex cases.

2. Materials and Methods

A cross-sectional descriptive study was conducted to assess the level of health awareness regarding hypertension among visitors to health centers in Baghdad. The study was conducted at the New Baghdad Model Health Center. The study period was six months, from September 2024 to February 2025. The sample size was 100 participants visiting the health center. The sample was selected through a systematic random sampling method. Inclusion criteria included all adults over 18 years of age, of both sexes, who agreed to participate and completed the questionnaire in full. Healthcare workers, patients unable to respond, and incomplete questionnaires were excluded.

Data Collection and Analysis

The study relied on a structured questionnaire based on international literature and previous studies. The questionnaire included three parts: demographic characteristics: age, gender, educational level, marital and professional status, health and behavioral history, previous employment, hypertension, family history, health habits, smoking, physical activity, nutrition, participants' knowledge about hypertension, definition of risk factors, and symptoms of complications. The data were analyzed by entering the data into SBS version 26. Statistical analysis: Descriptive analysis was performed to display frequency distributions and percentages for demographic characteristics and knowledge level.

3. Results

Table 1 shows the age distribution of the study participants. (n=100) .It was found that the age group of 30-50 years was the most common, representing 40 participants, or 39.6% of the total sample. This was followed by the age group less than 30 years, with 35 participants, or 34.7%. The age group of 50 years and older was the least robust, with 25 participants, or 24.8%. This distribution shows that the majority of the participants belong to the middle-aged adult group, which is the most present in the study. The younger and

older groups showed relatively less. This diversity in the age distribution reflects the comprehensiveness of the sample and gives the study a better ability to compare between the different groups.

Table 1. Age distribution of the study sample (n=100).

	Variable	Frequency	Percent
	female	58	57.4
sex	male	42	41.6
	Total	100	100

Table 2 shows that the vast majority of participants had a secondary education level, with 54 participants representing 53.5% of the total sample, while the percentages of participants with primary and university education or higher were equal, with each reaching 23 participants representing 22.8%. This distribution indicates that the important category in the study from an educational perspective is the category with secondary education, while the representation of categories with primary education or university education was less or equal. This diversity in the second level of the study population provides a basis for examining the relationship between educational level and other variables under study.

Table 2. Distribution by educational level Participants (n=100).

	Variable	Frequency	Percent
	primary	23	22.8
	secondary	54	53.5
Education level	University degree or higher	23	22.8
	Total	100	100

Table 3 shows that the majority of the sample members are married, with a percentage of (63.4%), representing (64) participants, while the percentage of unmarried individuals (bachelors) was (35.6%), representing (36) participants, out of a total sample of (100). These results indicate that more than half of the sample included in the study belong to the married category, which may have repercussions on the nature of the variables studied, especially if they are related to social or family aspects.

Table 3. Distribution of sample members according to marital status.

	Variable	Frequency	Percent
	married	64	63.4
marital status	single	36	35.6
	Total	100	100

Level of knowledge

Table 4 shows the level of knowledge of the participants about high blood pressure. The results showed that the highest percentage was among the category with good knowledge less than or greater than 75%, if it reached 37.6% with a number of 38 participants, followed by the category of medium knowledge (≥75%) with a percentage of 35.6% with a number of 36 participants, while it was lower than the participants with weak knowledge (<50%), as it recorded 25.7 with a number of 26 participants. These results indicate that the majority of the sample has an acceptable level of knowledge about high blood pressure, good to average, while only about a quarter of the participants suffer from weak knowledge of the disease.

Table 4. Level of knowledge about high blood pressure among participants.

	Variable	Frequency	Percent
knowledge	Good knowledge (755)	38	37.6
	Medium knowledge (50-74)	36	35.6
	Weak knowledge(< 50%)	26	25.7
	Total	100	100

Table 5 shows the information sources that participants rely on to obtain knowledge related to high blood pressure. The results showed that the most common source of information was the Internet and social media, as 45 participants relied on them, representing 44.6%. This indicates an increasing reliance on digital platforms as the main channels for obtaining health information. Reflecting the global shift towards electronic sources in the health sector, they constituted the second most important source, as 21 participants relied on them, representing 20% (8%). This shows that a segment of participants still trust health cadres as a reliable and accurate source of information, but their percentage remains lower than expected compared to the pivotal role of health workers in health auditing. In contrast, traditional media, such as television and radio, constituted 17.8%, with 18 participants, which is similar to a decline in individuals' reliance on these channels as the main source of health information, and perhaps causes the dominance of modern digital sources. Reliance on family and friends came in last place, representing 19.9%, with 15 participants, indicating that the circulation of Knowledge about high blood pressure in the social and personal context is less influential compared to other sources. In general, the results reflect the prevailing trend among participants and reliance on modern electronic sources more than traditional or official sources, which justifies the need to employ the Internet and social networking sites in an organized and purposeful manner in official health education programs. At the same time, there is a need to strengthen the role of workers in the press sector, considering it the most reliable source, ensuring that accurate and correct information reaches the community.

Table 5. Sources of information on high blood pressure.

	Variable	Frequency	Percent
Source	health workers	21	20.8
	Media (TV/Radio)	18	17.8
	internet and social media	45	44.6
	Family and friends	15	14.9
	Total	100	100

Table 6 shows that there is a statistically significant relationship between age and level of knowledge (p=0.014), where good knowledge was higher in the 50-year-old age group (48%) compared to younger groups. A strong correlation also appeared between educational level and knowledge (p=0.001), as the percentage of good knowledge was higher among those with university education (54%), while those with primary education recorded the highest percentage of weak knowledge (40.9%). As for gender, there was no significant relationship (p=0.320), as the percentage of knowledge was close between males and females. The results indicate that both age and educational level are factors affecting the level of knowledge about high blood pressure, while gender has no significant effect.

Table 6. The relationship between the level of knowledge and some demographic variables.

	Variable	Good Knowledge	Intermediate Knowledge	Weak Knowledge	Probability Value(P-Value)
Age	<30 years	25%	46.4%	28.6%	0.014
	30-50 years	24%	40.7%	11.2%	

	Age ≥ 50 years	48%	40.9%	40%	
Education level	primary	18.2	40.9%	40.9%	0.001 >
	secondary	24%	11.2%	24%	
	University degree or higher	54%	38.1%	7.1%	
sex	female	35.4%	45.8%	18.8%	0.320
	male	40.4%	38.5%	21.1%	

4. Discussion

The results of the current study revealed a set of important indicators related to the demographic characteristics of the participants and their level of knowledge about high blood pressure. First, the demographic characteristics showed that the most represented age group was (30-50) years old, representing 39.9.6%, followed by the group under 30 years old, representing 34.7%, while the group over 50 years old was the least represented, representing 24.8%. This result is consistent with what was stated in the study by Alwan et al. [15]. which found that the majority of participants in hypertension research belong to the middle-aged group, which is the group most likely to gain health awareness as a result of engaging in practical and social activities. The numerical majority in the middle-aged group also reflects a good ability to compare knowledge levels between different age groups. As for the female gender, the majority is 57.4%, which is in line with the study by Muhammad et al. [20]. This study showed that women are often more likely to participate in health studies, and this is linked to women's greater interest in preventive health than men. Regarding educational level, it was found that the majority of participants had a high school diploma (53.5%), which is similar to the results of the study by Saleh et al., which showed that participants with intermediate education represented the largest segment in community studies, reflecting the importance of this group in explaining the relationship between educational level and health knowledge. Regarding marital status, most participants were married (63.4%). This result is consistent with the study conducted by Hussein et al. in 2017, which confirmed that social status may be an important factor in measuring the level of knowledge about high blood pressure. Other results also showed that the majority of participants had a good or average level of knowledge, reaching 37.6% or 35.6% [18]. The percentage of those suffering from general weakness in knowledge reached 25.7%. This result is, of course, similar to the result reached by Abdul Rahman et al. in 2016, which found that only about a third of the participants had good knowledge about high blood pressure, while the remaining percentage had average or weak knowledge [17]. This result indicates the need to enhance health education, especially among groups with less education or younger groups. With regard to other sources of information about high blood pressure, most of the results showed that the Internet and social media were the important and main source of information that was most relied upon, reaching Its percentage was 44.6%, followed by health workers, whose percentage reached 20.8%, and then friends, whose percentage reached 14.9%.

These results are consistent with the Eisenach study , which indicated that the Internet has become the primary source of health information in most societies, with the decline in the role of educational media. However, the decreased reliance on health workers as the primary source of information (20.8%) contradicts what was stated in the Shamsi et al. study, which found that health workers are still the most reliable source of information. This discrepancy may reflect differences in cultural context or ease of access to modern digital sources. Regarding the relationship between knowledge and demographic variables, the results showed a statistically significant relationship between age and knowledge level (p=0.014), as the percentage of good knowledge increased among those with university education by 54%, while those with primary education recorded the highest percentage of poor knowledge by 40.9%. This result is consistent with what was stated in the 2014 study by Awad and Al-Nafisi, which showed that a high educational level is a basic factor in improving awareness of chronic diseases [16]. As for gender, it did not show a significant relationship (p=0.320), as the percentage of knowledge was close between males and females, which is consistent with the study by Ibrahim et al., which

confirmed that gender is not an influential factor in itself on the level of health knowledge [19].

5. Conclusion

The results of the study showed that the level of knowledge about high blood pressure among the participants was generally acceptable, as the largest percentage was concentrated within the two categories of good and average knowledge, while approximately a quarter of the sample had poor knowledge. It was also shown that the Internet and social media represent the most reliable source for obtaining health information, while the role of health cadres and traditional media was less than expected. The results proved that both age and educational level significantly affect the level of knowledge. Therefore, knowledge increases with age and educational level. Gender did not show any fundamental effect in general. These results indicate the presence of average health awareness about high blood pressure, with an urgent need to develop educational programs targeting younger groups with low educational levels, in addition to strengthening the awareness-raising role of health workers and controlling the use of electronic sources to ensure the accuracy of health information and its correct dissemination.

Recommendations

Strengthen health audit programs on hypertension, focusing on younger groups and those with low educational levels, as they are more vulnerable to poor knowledge. Activate the role of health cadres as a primary and reliable source of health information through awareness campaigns and workshops in hospitals and health centers. Employ the Internet and social media in an organized and purposeful manner to disseminate accurate health information, as it is the most widely used source among participants. Develop traditional media content (television and radio) to include modern and simplified educational programs that reach different age and educational groups.

REFERENCES

[1] Z. Lufa, "Research on the balance and optimization of medical resource allocation in China's metropolitan areas," *Nanjing Social Sciences*, vol. 376, no. 2, pp. 70–77, 2019.

[2] Z. Gongzhen, "A tentative discussion on the basic-level approach of patients seeking medical treatment," *China Health Manag.*, vol. 28, no. 12, pp. 895–897, 2011.

[3] R. Mayes and B. Armistead, "Chronic disease, prevention policy, and the future of public health and primary care," *Med. Health Care Philos.*, vol. 16, no. 4, pp. 691–697, 2013.

[4] A. Chockalingam, I. Balaguervintro, A. Achutti, *et al.*, "The world heart Federation's white book: impending global pandemic of cardiovascular diseases: challenges and opportunities for the prevention and control of cardiovascular diseases in developing countries and economies in transition," *Can. J. Cardiol.*, vol. 16, no. 2, pp. 227–229, 2000.

[5] K. Grumbach and T. Bodenheimer, "A primary care home for Americans: putting the house in order," *JAMA*, vol. 288, p. 7, 2002.

[6] R. M. Politzer, J. Yoon, L. Shi, R. G. Hughes, J. Regan, and M. H. Gaston, "Inequality in America: the contribution of health centers in reducing and eliminating disparities in access to care," *Med. Care Res. Rev.*, vol. 58, no. 2, 2001.

[7] H. D. Jr and R. Schwartz, "Health centers and the states. Partnership potential to address the fiscal crisis," *J. Ambul. Care Manage.*, vol. 26, no. 4, p. 285, 2003.

[8] "Opinions of the CPC Central Committee and the State Council on Deepening the Health Care System Reform." [Online]. Available: www.china.org.cn/government/scio-press-conferences/2009-04/09/content_17575378.htm. [Accessed: Nov. 15, 2012].

[9] "Communique of the National Bureau of Statistics of People's Republic of China on Major Figures of the 2010 Population Census (No. 1)." [Online]. Available: www.stats.gov.cn/english/newsandcomingevents/t20110428_402722244.htm. [Accessed: Nov. 8, 2012].

[10] J. O. Yu and Y. B. Cho, "The effect of an internet community on knowledge, self-efficacy and self care behavior in workers with hypertension," *J. Korean Acad. Nurs.*, vol. 35, pp. 1258–1267, 2005.

[11] G. Yang, L. Kong, W. Zhao, X. Wan, Y. Zhai, L. C. Chen, and J. P. Koplan, "Emergence of chronic non-communicable diseases in China," *Lancet*, vol. 372, pp. 1697–1705, 2008.

[12] "Fourth national health service investigation." [Online]. Available: www.nhfpc.gov.cn/mohwsbwstjxxzx/s8211/201009/49165.shtml.

[13] A. Akasheh, Y. Wu, Y. Li, L. D. Dustin, N. D. Wong, J. M. Gardin, S. P. Azen, and R. C. Detrano, "Association of blood pressure with left ventricular mass in untreated hypertensives in rural Yunnan Province," *Am. J. Hypertens.*, vol. 22, pp. 730–734, 2009.

[14] G. H. Dong, Z. Q. Sun, X. Z. Zhang, J. J. Li, L. Q. Zheng, J. Li, D. Y. Hu, and Y. X. Sun, "Prevalence, awareness, treatment & control of hypertension in rural Liaoning province, China," *Indian J. Med. Res.*, vol. 128, pp. 122–127, 2008.

[15] A. Alwan, R. Ahmed, and H. Salman, "Demographic characteristics and hypertension awareness among middle-aged adults," *J. Hypertens. Res.*, vol. 36, no. 4, pp. 215–222, 2018.

[16] A. Awad and H. Al-Nafisi, "Public knowledge of cardiovascular risk factors and awareness of chronic disease prevention," *BMC Public Health*, vol. 14, no. 1, p. 1138, 2014.

[17] R. Abdul Rahman, S. Ali, and A. Faraj, "Knowledge and awareness of hypertension among primary health care visitors: A cross-sectional survey," *Saudi Med. J.*, vol. 37, no. 11, pp. 1239–1246, 2016.

[18] K. Hussein, L. Mahmood, and D. Saleh, "The role of marital status in shaping health knowledge and behaviors among adults: A study from Middle Eastern communities," *East. Mediterr. Health J.*, vol. 23, no. 11, pp. 774–781, 2017.

[19] M. Brahim, R. Youssef, and A. Omar, "Gender and health literacy: Is there a difference in knowledge about chronic diseases?," *Patient Educ. Couns.*, vol. 101, no. 7, pp. 1356–1362, 2018.

[20] A. Muhammad, S. Khan, and F. Rahim, "Gender differences in participation and preventive health awareness: Evidence from community-based hypertension studies," *Int. J. Public Health*, vol. 65, no. 7, pp. 1023–1031, 2020.