

The Levels and Factors Associated with Access to Primary Care Services among Hypertensive Patients in Muang District, Phetchabun Province, Thailand: A Cross-Sectional Study

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KEYWORDS

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ABSTRACT

Objectives: The objectives of this study were to assess the levels of access to primary care services and to identify factors associated with access to primary care services among hypertensive patients in Muang district, Phetchabun province, Thailand.

Methods: The cross-sectional study was conducted in the primary care unit of Phetchabun Hospital from 1 May 2023 to 31 July 2023. Purposive sampling was used to select hypertensive patients to be participants. Data were collected using the questionnaire. Access to primary care services was divided into 4 dimensions (availability, accessibility, accommodation, and acceptability). The mean accessibility score was calculated and interpreted into 3 levels (low-high). Sociodemographic data were analysed as factors associated with access to primary care services using multiple logistic regression.

Results: A total of 120 participants were interviewed. Male-to-female ratio was 1:2.2. The mean age (\pm SD) was 61.9 (\pm 6.2) years. Overall, access to primary care was high (3.74 ± 0.62), with accommodation receiving the highest mean accessibility score (4.06 ± 0.66) and accessibility the lowest (3.08 ± 1.12). We found that age \geq 60 years (P-value 0.039, 95% confidence interval (95% CI) 1.077 – 16.383), living family (P-value 0.018, 95% CI 0.019 – 0.692), living in urban area (P-value $<$ 0.001, 95% CI 10.468 - 337.271), employed status (P-value 0.001, 95% CI 2.336 - 30.388) and income $>$ 10,000 Baht per month (P-value 0.037, 95% CI 1.102 – 24.642) were associated with access to primary care.

Conclusions: Overall, the level of primary care access was high. Age, living status, living area, employed status, and income were significantly associated factors. Expanding primary care services to local levels such as telemedicine might help improve the level of access. The effectiveness of expanding the service should be further study.

1. Introduction

Hypertension is an important non-communicable disease or NCD. Because it is one of the leading causes of premature death worldwide. [1] According to the global epidemiological study, approximately 8.5 million people died from hypertension.[2] Nowadays, there are more than 1 billion hypertensive patients around the world. [1] The global prevalence of hypertension was 22%. However, there was a difference in different regions. The highest prevalence was in the Africa region (27%) and the lowest prevalence was in the Americas region (18%).[3] The prevalence of hypertension in Thailand was 25%, the region of same in the Southeast Asia region [3, 4] To prevent death from hypertension, the patient must control their blood pressure. Because the risk of major cardiovascular disease events, coronary heart disease, stroke, heart failure, and all-cause mortality will decrease by 20, 17, 27, 28, and 13%, respectively, when systolic blood pressure decreases every 10 mmHg [5]. As the results of the research, patients must receive healthcare services regularly to control blood pressure [1]. Therefore, access to healthcare services are necessary.

Access to healthcare is the ability to get healthcare services such as disease prevention and control, screening, diagnosis, and treatment. [6] According to the World Health Organization (WHO) report, only half of the population in the world can access necessary healthcare services. [7] Primary care is one of models of healthcare service that wants to optimize the health of people and reduce disparities

across the population by increasing access to healthcare services. There are 5 core concepts of primary care: first contact accessibility, continuity, comprehensiveness, coordination, and people centred.[8] As the concepts, the patient can receive healthcare services continuously at primary care. Research showed that primary care can improve health outcomes and healthcare access [9, 10] Furthermore, access to primary care was associated with improved hypertension control [11, 12].

In Thailand, primary care was generally provided as a network called “Primary Care Cluster” or PCC. The provincial hospital or district hospital works as the headquarters and health centres at the sub-district level or the sub-district health-promoting hospital works as a branch. As primary care, the aim of primary care in Thailand is to increase access to healthcare [13, 14] Although many studies have been conducted on access to healthcare among Thais, there were few studies in primary care. Furthermore, almost all the research was conducted in elderly people [15-19] Although the level of access to healthcare was high, some studies report that there was a disparity in different demographics [20].

Objectives

the objectives of this study were to assess the levels of access to primary care services and to identify factors associated with access to primary care services among hypertensive patients in Muang district, Phetchabun province, Thailand.

2. Methodology

The cross-sectional study was conducted in the primary care unit of Phetchabun Hospital from 1 May 2023 to 31 July 2023. The primary care unit of Phetchabun Hospital works as a centre of primary care cluster in Muang District, Phetchabun Province. They provide the service to the population of Muang District, Phetchabun Province. Since 1 April 2023, all patients who do not have an appointment with other specialist doctors must see the family doctor in the primary care unit as the first contact.

The participants were hypertensive patients who received healthcare services in the primary care unit of Phetchabun Hospital at the time. Purposive sampling was used to select hypertensive patients to be participants. The patient who did not want to participate in this study was excluded. The total number of participants was 120 people. The sample size was calculated using the equation for the sample size for frequency in a population [21]. The expected frequency was 50, the acceptable margin of error was 10 and the 20% add.

Data were collected using the questionnaire. The questionnaire was divided into 2 parts, sociodemographic data, and access to primary care services. The concept of access of Penchansky R and Thomas JW was used as a theory to assess access to primary care [22]. In this study, we used only 4 of 5 dimensions of accessibility, availability (4 items), accessibility (2 items), accommodation (4 items), and acceptability (3 items). According to the three main health schemes in Thailand, the civil servant medical benefit scheme, the social health insurance, and the universal coverage scheme. Almost all of the Thai population can receive a health service for free [23]. Therefore, the affordability dimension, the ability to pay for the service, was not included in this questionnaire. Participants gave ratings of 1 to 5 on a five-point Likert scale (1=strongly disagree to 5=strongly disagree). The questionnaire was reviewed by 3 primary care experts for the content validity test. Item content validity (IOC) was greater than 0.66 in each item. The reliability test was performed in 30 hypertensive patients. Cronbach’s alpha coefficient was 0.85. To interpret the level of access, the mean accessibility score was calculated and interpreted as follow; 1.00 – 2.33 indicating low level access to primary care service, 2.34 – 3.67 indicating moderate level access to the primary care service, and 3.68 – 5.00 indicating high level access to primary care service [24].

Data were analysed using IBM® SPSS® statistic for window version 28.0.0.0. Sociodemographic data were shown in frequency, percentage and mean \pm SD. The level of access to primary care services was shown as mean \pm SD. The factors associated with access to primary care services were analysed using multiple Logistic regression. P-value <0.05 was the cut point of significant level.

This study was approved by institutional ethical committee of Phetchabun Hospital, Thailand. The approval number was IEC-09-2566.

3. Results and Discussion

A total of 120 participants were interviewed. The characteristics of the participants are illustrated in Table 1. There were 37 males and 83 females, resulting in a male-to-female ratio of 1:2.2. The mean age (\pm SD) was 61.9 (\pm 6.2) years. Almost two-thirds of them were married and almost all lived with their families. More than half of the participants live in rural area. More than 90% of them have education levels below the bachelor's degree. More than half of them were employed, and approximately three-quarters earn less than 10,000 baht per month.

Table 1 The characteristics of the participants (n=120)

Variables	n	%
Sex		
Male	37	30.83
Female	83	69.17
Age (Year)		
Mean\pmSD	61.89 \pm 6.22	
<60	39	32.50
\geq 60	81	67.50
Marital Status		
Single	9	7.50
Married	79	65.83
Widowed/Divorced	32	26.67
Living Status		
Living Alone	12	10.00
Living with Family	108	90.00
Living Area		
Urban area	44	36.67
Rural area	76	63.33
Education Levels		
Uneducation	8	6.67
Primary School	81	67.50
Secondary School	20	16.67
Bachelor's degree and Higher	11	9.17
Occupation		
Unemployed	47	39.17
Merchant	17	14.17
Agriculturist	28	23.33
Officer	28	23.33
Income (Baht)		
\leq 10000	92	76.67
$>$ 10000	28	23.33

Table 2 The levels of primary care access among hypertensive patients in Muang District, Phetchabun Province, Thailand (n=120)

Dimension	Mean	SD	Level
Availability	3.52	0.81	Moderate
Accessibility	3.08	1.12	Moderate
Accommodation	4.06	0.66	High
Acceptability	4.05	0.53	High
Overall	3.74	0.62	High

Factors associated with primary care access were shown in Table 3. We found that the patient who have age ≥ 60 years (P-value 0.039, 95% confidence interval (95% CI) 1.077 – 16.383), living in urban area (P-value <0.001 , 95% CI 10.468 - 337.271), employed status (P-value 0.001, 95% CI 2.336 - 30.388) and income $>10,000$ Baht per month (P-value 0.037, 95% CI 1.102 – 24.642) were associated with higher access. On the contrary, the patient who lived with his family was associated with lower access (P-value 0.018, 95% CI 0.019 – 0.692).

Discussion

The results of this study showed that the overall of level of access to primary care among hypertensive patients was high. The result was consistent with the previous study.[15-19] The result could be explained by the concept of primary care. The primary care unit was a first-contact provider providing health services to people, integrally and continuously. Therefore, the patient can easily receive health services.[8] This is the reason why the level of access to primary care services in this study was high. However, we found that the level of access in the availability and accessibility dimensions in this study was moderate, which is lower than in a previous study.

Table 3 Factors Associated with Primary Care Access among Hypertensive Patients in Muang District, Phetchabun Province, Thailand (n=120)

Variables	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Male	-0.72	0.58	1.544	0.214	0.487	0.156	1.515
Age ≥ 60 Years	1.435	0.694	4.27	0.039	4.2	1.077	16.383
Married Status	-0.535	0.625	0.733	0.392	0.586	0.172	1.993
Living with family	-2.158	0.913	5.587	0.018	0.116	0.019	0.692
Living in urban area	4.085	0.886	21.259	$<.001$	59.418	10.468	337.271
Bachelor's degree and Higher	-0.229	0.792	0.083	0.773	0.795	0.168	3.759
Employed Status	2.131	0.654	10.604	0.001	8.426	2.336	30.388
Income $>10,000$ Baht per month	1.651	0.793	4.335	0.037	5.21	1.102	24.642

The availability dimension is the relationship between the patient's need and the supply of a healthcare provider in terms of a kind of service.[22] Although the primary care unit tried to provide integrated service to the patient, some of the services were not enough such as emergency services. The primary care unit provides necessary emergency services such as suturing a small wound. However, in severe cases, they must refer the patient to the main hospital. This reason was consistent with the answers of the patients. During the interview, we found that in case of an emergency, the patients prefer to receive

the emergency service at the main hospital more than the primary care unit.

In this study, the lowest accessibility score was the accessibility dimension. Accessibility is a relationship between the location of healthcare facilities and the location of patients.[22] The primary care unit in this study was the health facility of the Phetchabun Hospital. The location of the primary care unit is urban areas. However, the primary care unit not only serves the services to the population in urban areas but also serves the service to the population in rural areas. In this study, nearly 2/3 of the participants live in rural areas. The patient may stay far from the primary care unit of the Phetchabun hospital which affects the accessibility score in the accessibility dimension. It was consistent with the previous study. The study found that the distance between the patient's home and health facility was the barrier to receiving medical services and it was a factor associated with healthcare access [25-27].

In this study, a high level of accommodation dimension was reported. Accommodation is the ability to conveniently use the service such as a short waiting time and the satisfaction of the patients [22]. There were studies that showed that long waiting time was associated with negative satisfaction and the satisfaction may increase by improving the waiting time [28, 29]. The high level of accommodation dimension may be explained by primary care can reduce the patient's waiting time. The data showed that primary care can reduce the waiting time from 184 minutes to 47 minutes.[30]

The acceptability dimension is the relationship between the patient's attitudes about the personal and practice characteristics of healthcare personnel. Moreover. It includes another environment such as the neighbourhood of the facility and another patient when the patient receives a service.[22] In this study, the level of access in the acceptability dimension was high. It was consistent with the previous study [18]. The good attitudes may come from the clean and comfortable environment of the primary care unit. There was a study showing that a physical setting may impact patient satisfaction [31].

In this study, we found that age, living status, living area, employed status, and income were factors associated with primary care access. For age, we found that age ≥ 60 years was the associated factor. This result was consistent with the previous study on elderly people which found that the level of access to healthcare of elderly people was high [15-19]. The high level of access may be from demographic change. Generally, elderly people have at least one chronic disease and need to use healthcare services more than younger ones [32].

The living status was the one of associated factors in this study. The patients who live with family might use healthcare services lower than the patients who live alone. This result is consistent with the study across the world (USA, England, Australia, Thailand). The study said that patients who live alone use healthcare services more than those who live with others. Because the patients who live alone do not have support when they are sick. Therefore, they need to use the healthcare service to cure their symptoms. In contrast, the patient who lives with others may stay in bed and receive care from their family [33-36].

The result showed that patients who live in an urban area have a higher level of access to primary care than patients who live in a rural area. The result may be due to the distance between the living area and the primary care unit. Although the primary care unit serves all the population in Muang District, its location is in an urban area. The result was consistent with other studies that the distance between the living area and the health facilities was the barrier to access to healthcare services [25, 26, 37, 38]. Transportation may be one of the cause to low access.[37] Due to the public transportation in this province is insufficient. The access to healthcare for patients in rural area may be lower than in urban

area.

In this study, employment status was the associated factor for access to primary healthcare. A study showed the relationship between employed status and access to healthcare. The unemployed patient was associated with poor healthcare access [38-40] This result may come from income. Unemployed patients may not have enough money to access to healthcare system. Income was also one of the factors that affected to healthcare. Lower-income patients could delay treatment and poor access to healthcare systems [37, 38] Furthermore, we found that, income was the associated factor of primary healthcare access in this study also.

Although some studies say that women were a barrier to access to healthcare [37], they were not in this study. The difference between previous studies and this study was the category of countries based on their income levels. The previous study studied in low-middle-income countries which could be a gender inequality such as males receiving preferential treatment compared to females, or in some places, females were restricted outside [37]. According to the World Bank, Thailand was an upper-middle-income country that focused on gender equality issue. Women in Thailand can work in various positions. They can earn money by themselves and have no restriction issues [41, 42]. This may be the reason why the women in Thailand can have greater access to healthcare. Moreover, some study said that women was a factor associated with healthcare access [38].

As our knowledge, this study was one of a few studies that study about healthcare access in the population not only elder patients but in the younger also. the study in Thailand mostly emphasized healthcare access in elder patients. Moreover, this study provided the information about the relationship between socio-demographic factors and primary care access also. The limitations of this study were the age range of the population in this study was too narrow (50–70-year-old). Moreover, the purposive sampling was use in this study. The selection bias might occur.

Recommendations

Service providers should expand the primary care service to the sub-district level such as setting up the primary care cluster in sub-district health-promoting hospitals to reduce the distance between the patient's area and the provider's area. Another option is to use telemedicine. In general, telemedicine can reduce distancing barriers. Decreasing distance may increase the level of access to primary care.

For further study, we suggested expanding the age range to find the effect of age and access to primary care and using random sampling to prevent selection bias. Furthermore, the study to reduce the distance between the patient's area, and the provider's area such as telemedicine, should be considered.

4. Conclusion and future scope

Overall, the level of primary care access among hypertensive patients in Muang District, Phetchabun Province was high. Age, living status, living area, employed status, and income were significantly associated factors in this study. Expanding primary care services to local levels such as telemedicine might help improve the level of access. The effectiveness of expanding the service should be further study.

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