

# Self-management experiences in people with hypertension and low health literacy: Patients and healthcare professionals' perspectives

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Received: 10 June 2026 / Accepted: 24 September 2026

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## Abstract

**Background** Self-management education is a key component of hypertension care. However, individuals with low health literacy often have suboptimal self-management skills after receiving the education. Little is known about their experiences in receiving self-management education. This study aimed to explore the experiences, facilitators, and barriers to self-management education among community-dwelling individuals with hypertension and low health literacy, from the perspectives of patients and healthcare professionals.

**Methods** Individual semi-structured interviews were conducted. Purposive sampling was used to recruit participants with hypertension and low health literacy, currently receiving care at a community health centre in Vietnam. The participants were interviewed via the Zalo app. All interviews were audio-recorded and transcribed verbatim. NVivo 12 software and thematic analyses were used to analyse the interview data.

**Results** Three themes were identified: (1) Limited engagement with health information and self-management; (2) Shaping health practices from one's own resources; and (3) Needs for better hypertension management. Our findings suggested that persistent barriers reduce patients' ability to use health information and apply self-management in daily life. There is a need to develop an appropriate self-management program for people with hypertension and low health literacy.

**Conclusion** Future self-management interventions for individuals with hypertension and low health literacy should focus on strengthening proactive communication, appraising health information, simplifying information into clear, actionable steps, providing reliable resources, and engaging social and family support.

**Keywords** Hypertension · Self-management · Low health literacy

## Introduction

Hypertension is one of the most common non-communicable diseases [1]. According to the World Health Organisation (WHO), hypertension affects about one-third of adults aged 30 to 79 years worldwide, and only half of those who received treatment achieved blood pressure (BP) control below 140/90 mmHg [2]. Hypertension is a

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significant cause of cardiovascular mortality and disability, and its long-term management places a substantial burden on healthcare systems [3–4].

It is estimated that around one-third of people with hypertension in the world have low health literacy [5]. Health literacy (HL) refers to an individual's ability to access, understand, appraise, and use health information and health services to make informed decisions or take appropriate actions regarding their health problems [6]. HL is categorised into three types: functional HL (the ability to access and understand information using basic reading and writing skills), communication HL (the ability to understand information from communications), and critical HL (the ability to appraise and use information for daily practice) [7]. Studies showed a significant association between low HL, low self-efficacy, poor performance of self-management behaviours, and uncontrolled BP [8–10].

Substantial evidence shows that self-management interventions (SMIs) assist individuals in mastering self-management skills and building self-efficacy, and are associated with a significant reduction in BP levels [11, 12]. Despite its potential benefits, HL is not considered in most SMIs. A longitudinal qualitative study has found that people with low HL may not fully understand disease-related information due to complex details and high-level reading materials [13]. One qualitative study has investigated perceptions of self-management among people with hypertension and low HL and found that they could recognise the self-management requirements but had difficulty following them due to complex requirements and daily-life stress [14]. Given the high prevalence of low HL among people with hypertension, more studies examining their experiences with self-management education may help identify existing gaps and inform the development of appropriate interventions. In addition, healthcare professionals (HPs) play a leading role in promoting self-management among people with hypertension by translating clinical recommendations into understandable, practical guidance. HP's attitudes and communication skills also affect patients' understanding and adherence to the self-management behaviours [15, 16]. However, none of the previous studies has included HPs in providing SMIs for people with hypertension and low HL. Thus, incorporating HP's perspectives is critical for understanding the practical processes and challenges of delivering SMIs to those with low HL, thereby enabling the identification of strategies to optimise self-management.

In Vietnam, hypertension is a significant public health concern, as highlighted in the National Strategies on Non-Communicable Diseases from 2015 to 2025 [17]. Many programmes have been implemented since 2015 to support community health centres (CHCs) in hypertension management [17]. Despite this effort, the medication adherence and BP control among people with hypertension in Vietnam remain suboptimal, with an adherence rate of 50–70% and only 30% of all people with hypertension achieving BP control [18, 19]. In addition, studies found that more than half of people with hypertension in Vietnam had low HL [20, 21]. It is necessary to explore how those with low HL levels access, understand, appraise, and use self-management information from HPs to manage hypertension. The findings would be valuable for informing the development of HL-tailored SMIs to improve self-management and BP control in this population.

This study aimed to explore experiences, facilitators, and barriers to accessing, understanding, appraising, and using information provided in SMIs, as well as support needs, among community-dwelling individuals with hypertension and low HL, and to gather perspectives from both people with hypertension and HPs.

## Methods

### Study design and setting

A qualitative study using individual in-depth, semi-structured interviews was conducted at a CHC in Vietnam, from October to November 2025. The Consolidated Criteria for Reporting Qualitative Studies (COREQ) checklist was adhered to [22].

## Participants and recruitment

Participants were recruited if they were (1) aged 18 years or above, (2) diagnosed with primary hypertension (systolic BP  $\geq 140$  mmHg or diastolic BP  $\geq 90$  mmHg with no identifiable secondary cause) [23], (3) currently receiving care at primary care settings, such as medical consultations, medication refills, and health education, (4) able to communicate in Vietnamese, (5) a HL score of 33 or below (indicating inadequate or problematic HL) on the Vietnamese Short-Form Health Literacy Questionnaire (HLS-SF12) [24], and (6) had access to smartphone and able to provide an informed written consent. People who were pregnant, had mental disorders, cognitive impairments (Mini-Cog score  $< 3$ ) [25], had severe complications or were inpatients were excluded.

Participants were recruited through purposive sampling (selected for varied ages, genders, and years of hypertension) to ensure that a broad range of perspectives and experiences was included in the interviews [26]. HPs were recruited into the study if they (1) were a physician or nurse who currently works in the CHC, (2) had at least 2 years of experience in caring for people with hypertension, and (3) had experience in providing self-management education to people with hypertension in the CHC.

## Data collection

### Interviews with people with hypertension and low HL

Written informed consent was obtained from all participants before study participation. After signing the consent form, participants were screened for HL levels using the 12-item Vietnamese Short Form of the Health Literacy Questionnaire (HLS-SF12) [24]. They were asked to rate how easy it is for them to access, understand, appraise, and apply health information across three domains of healthcare, disease prevention, and health promotion. Each item was rated on a 4-point Likert scale (from 1 = “Very difficult” to 4 = “Very easy”). The total score of the scale was calculated by the formula  $HL\ score = (Mean - 1) \times (50/3)$ , where Mean is the average score of the 12 items. The HL score ranges from 0 to 50; a higher score indicates better HL [27]. Individuals with an HL score of 33 or lower (categorised as low HL) were invited to participate in a semi-structured online interview with the Principal Investigator (PI) via the Zalo app. The interviews lasted for about 30–45 min. Participants were invited to share their experiences accessing, understanding, appraising, and using the information provided in SMIs, their perceived facilitators and barriers, and the support needed to better understand and use the information to self-manage their condition. The interviews continued until data saturation was achieved [28]. All interviews were audio-recorded and transcribed verbatim for further analysis.

### Interviews with HPs

All HPs in the community centre were invited, and they all agreed to participate. Written informed consent was obtained from all participants before study participation. After HPs signed the consent form, the RA arranged an online interview via the Zalo app between the HP and the PI. The interviews lasted around 30–45 min. HPs were asked about their experiences providing self-management education to individuals with hypertension, particularly those with low HL; the common difficulties encountered by people with low HL; and the additional support that might improve patients’ understanding and use of self-management information. Interviews were audio-recorded and transcribed verbatim for further analysis.

## Data synthesis

All audio recordings from the interviews were transcribed verbatim into Vietnamese by the PI. NVivo 12 software was used for data management, and thematic analysis was used to analyse the interview data [29]. The data analysis followed the six steps: (1) read the transcripts several times to gain familiarity with the data and noting

the initial ideas, (2) generate codes by examining the transcripts line by line and assigning relevant data into initial codes, (3) sorting the codes and categories related codes into potential subthemes and themes, (4) review the themes if it relation to the code extracts and generate a theme map, (5) themes were defined and named to express the scope and contents of theme captures, (6) reporting results and selecting vivid quote examples to illustrated each theme [30]. All the themes, subthemes, and codes were translated into English by the PI, who is fluent in both Vietnamese and English. The second and third authors reviewed the themes, subthemes, and codes. All authors discussed the findings and reached a consensus on the data analysis.

### Reflexivity statement

The PI is a registered nurse and a PhD student. In both bachelor's and master's degrees, she has completed clinical internships in the Cardiovascular Department and conducted a project on medication adherence among people with hypertension. She also has experience as a clinical instructor in the Cardiovascular Department at a hospital in Vietnam. Her background and prior knowledge of the topic may provide a foundation for engaging with participant and exploring their experiences of self-management. The PI has sufficient translation competence, having studied both Master's and PhD programmes at universities where English is the primary language of instruction. In addition, she discussed the findings with the research team, including her two supervisors (the second and third authors), who had extensive experience in qualitative research and cardiovascular care. The research team comprised both male and female researchers, providing diverse perspectives during data interpretation. Regular team discussions were used to critically examine emerging interpretations and ensure they were grounded in participants' accounts rather than influenced by the researchers' personal assumptions. In terms of researcher-participant relationships, the research team has no personal or professional relationship with the participants prior to their involvement in the study.

### Rigour

The rigour of the study was guided by Lincoln and Guba's criteria [31]. Credibility was addressed by returning the analysis results to two participants to get their feedback. Participants were selected with varied characteristics to support the transferability of the findings. Dependability and confirmability were ensured by maintaining detailed records of all research procedures, saving all coding notes and analysis records, and providing direct quotes to explain the findings, all of which were reviewed by the second and third authors.

## Results

### Participant characteristics

A total of 20 individuals with hypertension and low HL were included in this study. The mean age of the participants was 61 years (SD=10.9); 13 (65%) were female; 12 (60%) had been diagnosed with hypertension for 5 years or longer; and the mean HL score was 26.9 (SD=5.9). In addition, five individual interviews were conducted with five HPs aged 30–52 years, including three physicians and two nurses. Tables 1 and 2 show the details of the participants' characteristics.

### Themes and subthemes

Three themes with eight subthemes were identified, including (1) Limited engagement with health information and self-management, (2) Shaping health practices from one's own resources, and (3) Needs for better management of hypertension. Table 3 presents the synthesised themes and subthemes in detail.

**Table 1** Demographic and clinical information of the individuals with hypertension ( $n=20$ )

| Characteristics                                |                            | $n$ (%)                |
|------------------------------------------------|----------------------------|------------------------|
| Age (Mean $\pm$ SD, range)                     |                            | 61.0 $\pm$ 10.9, 40–80 |
| Gender                                         | Male                       | 7 (35%)                |
|                                                | Female                     | 13 (65%)               |
| Marital status                                 | Married                    | 18 (90%)               |
|                                                | Widowed                    | 2 (10%)                |
| Occupation                                     | Employed                   | 11 (55%)               |
|                                                | Unemployed/retired         | 9 (45%)                |
| Education level                                | Secondary school or below  | 17 (85%)               |
|                                                | High school or above       | 3 (15%)                |
| Living arrangement                             | Living alone               | 1 (5%)                 |
|                                                | Living with family members | 19 (95%)               |
| Year of hypertension                           | Mean $\pm$ SD, range       | 7.9 $\pm$ 6.3, 1–20    |
|                                                | < 5 years                  | 8 (40%)                |
|                                                | $\geq$ 5 years             | 12 (60%)               |
| Had comorbidities ( $\geq 1$ )                 |                            | 12 (60%)               |
| Systolic blood pressure (mmHg, Mean $\pm$ SD)  |                            | 142.1 $\pm$ 9.5        |
| Diastolic blood pressure (mmHg, Mean $\pm$ SD) |                            | 81.7 $\pm$ 5.0         |
| Current antihypertensive medication(s)         | ACE/ARB                    | 4 (20%)                |
|                                                | Beta blockers              | 4 (20%)                |
|                                                | Calcium channel blocker    | 10 (50%)               |
|                                                | Combination pill           | 2 (10%)                |
| Health literacy score (Mean $\pm$ SD, range)   |                            | 26.9 $\pm$ 5.9, 15–33  |

Note: ACE: Angiotensin Converting Enzyme; ARB: Angiotensin Receptor Blockers, SD: Standard Deviation

**Table 2** Characteristics of HPs

| Profession         | Age | Educational level  | Working experiences in the current position (years) |
|--------------------|-----|--------------------|-----------------------------------------------------|
| Physician 1        | 52  | Doctor of Medicine | 30                                                  |
| Physician 2        | 50  | Doctor of Medicine | 26                                                  |
| Physician 3        | 38  | Doctor of Medicine | 11                                                  |
| Registered Nurse 1 | 40  | Diploma            | 17                                                  |
| Registered Nurse 2 | 34  | Diploma            | 9                                                   |

## Theme 1: Limited engagement with health information and self-management

**Subtheme 1.1: Incomplete views of hypertension treatment and self-management** Many participants mentioned that they have no symptoms of hypertension. From most patients' perspectives, a serious illness presents noticeable symptoms and disrupts daily life, prompting them to seek treatment. In contrast, conditions with no or mild symptoms are perceived as minor and therefore receive less attention.

I came to the CHC because of my back pain, but after the examination, the doctor said my blood pressure is very high, and it should be a priority rather than my back pain. I just heard that, but I don't think a lot, I don't even have any other symptoms except the back pain. (Participant 13, aged 65).

In addition, participants also perceived that hypertension is just like a disease of older adults, which makes them less concerned, as it is inevitable in old age. For other participants, taking medication and regular visits are perceived as sufficient to manage hypertension rather than adopting lifestyle modification.

I just take the medication, one pill per day. I think that's enough... I have to take care of my grandchildren... she is still a baby... no time for other activities. (Participant 2, aged 67).

**Table 3** Perspectives on hypertension self-management

| Themes                                                                            | Subthemes                                                                              | Codes                                                                                                                                                          |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Theme 1:</b><br>Limited engagement with health information and self-management | <b>Subtheme 1.1:</b> Incomplete views of hypertension treatment and self-management    | Have no symptoms, pay more attention to comorbidities, taking medication and regular visits are sufficient, and lack awareness of the complication.            |
|                                                                                   | <b>Subtheme 1.2:</b> Mismatch between participants' needs and information received     | Uncertainty in daily practice, inappropriate educational materials, lack of strategies to support better understanding                                         |
|                                                                                   | <b>Subtheme 1.3:</b> Reluctance to communicate with HPs                                | Low confidence in communicating with HPs, limited engagement in shared decision-making, and insufficient consultation time.                                    |
|                                                                                   | <b>Theme 2:</b> Shaping health practices from one's own resources                      |                                                                                                                                                                |
|                                                                                   | <b>Subtheme 2.1:</b> Personal experiences and informal advice                          | Personal experiences, advice from HPs, family members, relatives, friends, and peers with the same condition.                                                  |
|                                                                                   | <b>Subtheme 2.2:</b> Online health information                                         | Learn useful tips from the Internet, inability to identify reliable and accurate information                                                                   |
|                                                                                   | <b>Theme 3:</b> Needs for better management of hypertension                            |                                                                                                                                                                |
|                                                                                   | <b>Subtheme 3.1:</b> Encouraging communication and reinforcement of health information | Professional communication, understanding the benefits of applying health information, step-by-step guidance, and receiving information on multiple occasions. |
|                                                                                   | <b>Subtheme 3.2:</b> Simplified and diversified health educational materials           | Simple written information, visual aids, and reminder notes.                                                                                                   |
|                                                                                   | <b>Subtheme 3.3:</b> Familiar and supportive environment                               | Familiar settings, warm and supportive facilitators, peers sharing, and family support.                                                                        |

According to the HPs, due to the lack of knowledge and asymptomatic, many people with hypertension only seek medical attention when they experience severe complications of hypertension, which makes the treatment for hypertension more complicated.

They came with a nose bleeding, fall injuries... or some even have signs of stroke. By that point, we often have no choice but to refer them to higher-level hospitals for more intensive treatment. (Physician 2, aged 50).

**Subtheme 1.2: Mismatch between participants' needs and information received** The majority of participants reported receiving only brief information about daily medication, a reminder to exercise, and a low-salt diet during their visits to the CHC. Some attended an irregular health education program (1–2 sessions per year, 30–60 min per session) at the communal cultural house. However, these sessions were typically short, covering various health topics (such as dengue fever, vaccinations, and noncommunicable diseases) and other community activities (such as charity events or community meetings). According to the participants, the education they received was general, particularly regarding the diet.

They [physicians] told me to reduce salt intake. But I'm not really sure what's considered low salt. When I cook, I just try to use less salt... until the food tastes slightly bland. (Participant 6, aged 74).

In addition, they expressed that much of the information is presented as requests for change rather than explanations of why the change would be beneficial, which negatively affects participants' adherence.

*'The nurse told me to stop smoking to lower my blood pressure...But my friend gained 5kg after 2 months of stopping smoking, and his blood pressure is still high.'* (Participant 5, aged 62).

Furthermore, lay beliefs about health maintenance increased uncertainty and inconsistencies in daily practice regarding HP's recommendations. In particular, some participants, who were farmers or manual labourers, believed that consuming a high-salt diet helped them maintain sufficient energy for heavy physical work. Insufficient information about how salty foods affect BP, along with practices based on lay beliefs, increases uncertainty about the need to reduce salt intake in daily life.

During harvest season, I often have to work in the hot sun for a whole day, so I tend to eat more salty food... Sometimes, I try to cut back a bit... but I'm not really sure it makes any difference. (Participant 8, aged 52).

Most participants reported that leaflets helped them recall information at home. However, some found the materials text-heavy or complex, leaving them fatigued while reading or recalling. For those with limited reading ability, this fatigue led them to disengage from the information. Age-related visual impairment also further limited their ability to read and engage with writing materials.

It [a leaflet] shows too many numbers for calories and salt in food. I can't keep track or calculate it... It's too hard for me. (Participant 11, aged 65).

According to HPs, information about medication use was prioritised during the health visits, with some attention to lifestyle modifications. However, they rarely confirm whether patients fully understand or are committed to the lifestyle change recommendation and often rely on written materials for patients to review at home. Furthermore, without specific training to educate those with low HL, HPs reported difficulty simplifying information, particularly daily diets and salt intake calculations.

For those with a low education level, we do not have any specific strategies... things like eating less than 5 grams of salt per day might be difficult for them. I just told the simple things, like... reduce the salt used in cooking, do not eat fermented fish sauce or canned goods... For other information, they can read at home by themselves or with the help of a family member. (Physician 2, aged 50).

**Subtheme 1.3: Reluctance to communicate with HPs** According to most participants, HPs were consistently in higher positions due to their expertise and knowledge. Therefore, any interaction with them must be handled with caution and respect. Consequently, participants reported low confidence in communicating with HPs.

I feel too shy to ask questions to the doctor, because I see myself as less knowledgeable. The doctor is highly educated, I worry that he might judge or even laugh at my lack of knowledge. (Participant 2, aged 67).

In addition, more than half of the participants perceived that they had limited permission to engage in shared decision-making. They often viewed medical encounters as HP-led rather than collaborative. Thus, participants tended to accept treatment decisions without seeking clarification or expressing concerns.

I took whatever medication the doctor prescribed. If I ask too many questions, the doctor might think I'm not very confident in his treatment. Then he might ask... if I didn't trust him, why would I even go see him? (Participant 16, aged 67).

The lack of consultation time also influenced participants' willingness to ask questions and HPs' capacity to address them.

There is nothing too serious, I mean, my blood pressure... And many patients are waiting outside, so I don't want to make them wait. (Participant 6, aged 74).

## Theme 2: Shaping health practices from one's own resources

**Subtheme 2.1: Personal experiences and informal advice** The majority of participants expressed good adherence to medication following the HP's recommendation, particularly for those who experienced severe symptoms.

However, instead of following HPs' recommendations from the outset, experiencing symptoms and their impact on daily activities are among the most important factors in patients' commitment to treatment adherence.

I once fell while I was riding a bicycle to the market because of my high blood pressure, and ended up badly scraping my face and body. That experience really scared me. Since then, I have never forgotten to take my medication.. (Participant 10, aged 57).

In addition, learning from people around, particularly by hearing about others' experiences with complications and different treatment approaches, was the most frequently mentioned by participants. These real-life stories increased their awareness of the potential consequences of uncontrolled BP and motivated them to adhere more closely to treatment recommendations.

In the past two or three years, there have been many more stroke cases in our village, and from time to time, I hear about someone having a stroke. This has led me to pay more attention to taking my medication regularly. I don't want it to happen to me. (Participant 6, aged 74y).

However, besides increased awareness and motivation from peer sharing, reliance on advice from social networks sometimes led to inappropriate health practices, such as making medication decisions without consulting formal HPs. Furthermore, although antihypertensive medicines classified as prescription medicines are legally required to be dispensed with a prescription in Vietnam, dispensing prescription medicines without a prescription has been reported as a common practice in some community pharmacies [32–34]. Therefore, the ease of purchasing medication at pharmacies without a prescription makes it easier for patients to switch to a new prescription if they feel their current one is ineffective. Some participants also reported using folk remedies based on word-of-mouth recommendations.

My neighbour also had high blood pressure. She said that she bought medication from the pharmacy, and it was better than the ones we received from the CHC. Then I borrowed some from her and took one per day as usual... And I felt less tired compared to my previous medication, so I decided to switch to this... I rarely came to CHC to collect the blood pressure medication. (Participant 11, aged 65).

**Subtheme 2.2: Online health advice tips** Participants reported occasionally encountering helpful tips on popular media channels such as YouTube, Facebook, and TikTok. Accessing information in various media formats helps participants learn useful tips they might not receive from their health consultants.

I watched a video showing how to do a simple head-and-neck massage to improve circulation. I follow along every day before going to sleep and after waking up, and it really helps.(Participant 1, aged 71).

Compared to other sources, Internet information is less popular among participants due to limited smartphone skills. In addition, participants expressed frustration with the difficulty in identifying reliable sources.

I've seen TikTok videos talking about exercise, diet or health tips... There are many things... I don't know which is the most correct, I just follow those who seem like doctors... as they're wearing white coats. (Participant 16, aged 67).

According to HPs, the spread of social media, along with limited knowledge and difficulty identifying high-quality, accurate information resources, leads some patients to make incorrect decisions in daily health practices or even to severe complications.

Lately, there's been an online trend promoting the use of high doses of lemon and salt water to cure various diseases. My colleague once met a hypertension patient who had a stroke after one month of drinking high-dose lemon salt water. (Physician 3, aged 38).

### Theme 3: Needs for better management of hypertension

**Subtheme 3.1: Encouraging communication and reinforcement of health information** Compared with the leaflet, more than half of the participants preferred to discuss with HPs in person. However, HPs' attitudes and communication will affect their intention to participate in the discussion. For HPs, starting lifestyle change recommendations by asking about patients' daily habits and incorporating small changes that fit their routines could increase patients' participation in the communication process. In addition, providing step-by-step instructions for specific tasks for their daily activities will make it easier for them to remember and follow them at home.

The patient said he usually eats with an extra bowl of fish sauce for every meal... I did not ask him to quit that habit, just suggested dipping less and skipping it a few times a week. (Nurse 5, aged 34).

Furthermore, education should be delivered multiple times, in conjunction with home visits or phone calls, to enhance adherence in this population.

For those with low health literacy, I think they need regular education...not only at community health centre but also at home.. we should come often to see how they do it at home, rather than just telling them to follow. (Physician 3, aged 38y).

**Subtheme 3.2: Simplifying and diversifying educational materials** Most participants preferred to read the leaflet with many pictures rather than a small amount of text or numerical information. They also suggested using a variety of educational materials. Some mentioned using illustrations to describe the information, while others suggested adding video to education.

I like watching videos about cooking or doing exercises... I could do the housework while watching them. It is easier to follow. (Participant 10, aged 57).

**Subtheme 3.3: Familiar and supportive environments** Regarding the health education setting, participants preferred programs in familiar settings, such as their regular community, which made them feel more comfortable and confident.

If they have an education program at the community health centre, I'll come, it's just a 10-minute walk from my house... I'm quite familiar with the staff here. (Participant 6, aged 74).

Furthermore, encouragement and shared experiences from family or friends help participants feel motivated and increase confidence in managing daily self-care tasks.

I saw many people walking for exercise in the village in the early morning or after dinner. It's great to have someone to talk to while walking. I have more motivation to walk up early to join them. (Participant 11, aged 55).

In addition, combining family support with device reminders was mentioned as an effective way to help participants take their medication or follow their treatment plan.

My daughter set her voice alarm to remind me, 'Dad, remember to take your medicine on time!'... Each time I hear her voice, it motivates me to take my medicine. (Participant 12, aged 45).

## Discussion

This study explored the experiences, facilitators, and barriers of self-management from the perspective of people with hypertension and low HL, as well as the HPs. The findings suggested that most participants exhibited low levels of information-seeking or active learning regarding hypertension management. This finding is consistent with previous studies indicating that people with low HL tend to delay symptom appraisal or health-seeking due to difficulty recognising symptoms or fear of the consequences identified after a health consultation [35, 36]. In addition, receiving too much information about diseases can leave them feeling overwhelmed or anxious, leading them to avoid attending health education sessions [37]. On the other hand, to develop self-management skills, an ability to understand health information (functional HL) must be a basic requirement. According to the Health Literacy Universal Precaution Toolkit, limiting information, focusing on a few key messages, and multi-format delivery could enhance functional HL and reduce triggers of anxiety or avoidance [38]. These findings suggest a need for concise information on common symptoms, individual risk factors, and precautions, presented in an appropriate format to support this population.

Communication with HPs has been identified as a common challenge among people with low HL [39, 40]. Similarly, patients often view HPs working in the study health community centre as figures of authority whose words should not be questioned. This communication pattern discourages interactive dialogue and limits opportunities for clarification. The ability to communicate effectively with HPs (communicating HL), including extracting information through interactions, accurately describing symptoms and experiences, and actively seeking advice, plays an important role in enhancing self-management behaviours [41]. To address this, common strategies suggested in the literature include limiting information to “need-to-know” and “need-to-do” concepts, ensuring they minimally understand the information via the Ask Me 3 technique, action-oriented statements, repeating and summarising key points, and teaching-back should be used when communicating with patients [38, 42]. However, applying these strategies in routine practice may present challenges. While limiting information can reduce cognitive burden, excessive simplification may risk omitting important information or oversimplifying complex medical decisions [43]. Similarly, although teach-back can help identify misunderstandings, its implementation in clinical settings may be challenging because it requires appropriate training and skills and may be constrained by limited consultation time and workload. In addition, some HPs are also concerned that the approach could make some patients feel anxious or stigmatised [44]. These considerations highlight the need to balance clarity and comprehensiveness when adapting communication for people with low HL.

Our study found that participants perceived taking medication and attending appointments as the main components of self-management. In addition, our findings suggest that self-management information, particularly regarding lifestyle modification, was not always communicated in ways that supported patients’ understanding and ability to apply it. Lifestyle advice was often presented as requests for behaviour change rather than through explanation or shared decision-making, while written materials were commonly relied upon for further information at home. This may partly reflect a mismatch between patients’ needs and HPs’ perceptions of their abilities. Previous studies have found that HPs often overestimate patients’ HL, which may lead to communication that is insufficiently adapted to patients’ needs [45, 46]. Furthermore, people with low HL often seek emergency services rather than follow up with preventive care, so they might encounter different HPs on multiple occasions, which could lead to a lack of long-term ties and trust [47]. Otherwise, the enduring relationships within their social networks (such as family members, neighbours, relatives, or friends), or the easy access to and understanding of health-related information from social media (such as television, Facebook, and YouTube), lead them to place more trust in compared to the authoritative information [48, 49]. Within Vietnamese culture, gathering information from family members and community networks is the easiest way to fill knowledge gaps, offering quick reassurance and emotional support. Moreover, the trust in informal information may be higher among those who have had negative experiences with formal information [48]. However, for those with low HL, a lack of appraisal skills, such as verifying and assessing the applicability of information or resources to make health

decisions (critical HL), might lead to incorrect health practices [50]. As found in our study, relying on informal sources leads to misconceptions, as evidenced by participants' common belief that a single medication is suitable for all patients and the priority given to home remedies for hypertension (such as high-dose lemon salt water or guava leaf). It highlights gaps in communication and education about side effects, medication adherence, and the risks of obtaining antihypertensive drugs from pharmacies without medical supervision. These findings suggest a need for clearer explanations, encourage shared decision-making through interactive discussions, and provide training to improve the ability to appraise information. Particularly, information on medication adherence and the risk of non-prescribed antihypertensive use also needs to be clarified. Furthermore, given the impact of social networks on health practices, strengthening community HL through community-based health promotion programmes might be considered.

Despite the barriers, participants expressed different ways of shaping their health practices. For those with low HL, learning from personal experiences and from others with the same condition is one of the most important elements. This finding is consistent with Bandura's principles of self-efficacy, which indicate that individual behaviours can be improved by enhancing self-efficacy through experiences of successfully performing a task and observing others do so [51]. Besides, participants reported using the Internet to interpret health information in daily practice. However, most searches are not conducted on the target website or through high-quality information resources. Information is mainly obtained from mainstream social media such as Facebook, YouTube, or TikTok. Thus, developing a reliable health information channel on a widely used patient platform may help improve access to trustworthy health information. However, reliance on smartphone-based delivery may pose challenges due to design complexity and users' digital skills, particularly among older adults and those with limited reading or digital skills. Therefore, more accessible complementary approaches, such as simple voice messages, links to reliable, visually engaging health information, or follow-up telephone calls, may also help facilitate access to health information.

We found that people with low HL were more likely to join face-to-face education organised by HPs in a familiar setting. Studies have shown that those with low HL have limited ability to navigate health services, less access to or use of preventive services [37, 47]. Convenient access to services is associated with improved treatment adherence [52]. Thus, organising programs in familiar settings, such as the CHC or the communal cultural house, is recommended. Participants also suggested diverse educational materials. According to the most recent systematic review, there is no significant difference between video-based interventions and oral discussions with an HP in improving HL and comprehension of the material [53]. Therefore, more research is still needed on how best to design and test simple health materials on enhancing HL and health outcomes among those with low HL.

## Limitation

This study has some limitations. First, the participants were recruited from a single CHC in Vietnam, which may limit the transferability of the study results to other settings. Secondly, the findings were explored by recounting participants' experiences. Further study might employ both interviews and observations to generate a more comprehensive understanding of participants' experiences.

## Conclusion

This study identified barriers to self-management of hypertension among community-dwelling individuals with low HL in the study setting, including limited engagement in information-seeking and active learning, difficulties applying health information to daily practices, and the influence of lay beliefs and social practices in accessing and applying health information. The findings suggest that incorporating HL strategies tailored to individuals with low HL, such as simplifying information to address misunderstandings, adopting a step-by-step instructional approach, practising shared decision-making through interactive discussions, and providing training to improve

the ability to appraise information, may help address some of these challenges. Future intervention research in similar settings could consider combining multiple HL strategies to better support people with hypertension and low HL.

## Practical implications

The findings highlight the need to design HL-tailored self-management programs to support people with hypertension and low HL, and to evaluate whether these programs could better improve self-management behaviours and clinical outcomes. Future interventions could consider incorporating key information to address misunderstandings about hypertension and self-management, opportunities to strengthen patient-healthcare provider communication skills, and support for critically appraising health information.

In clinical practice, communicating with individuals with low HL may benefit from plain-language explanations, the Ask Me 3 approach, and brief teach-backs to check understanding. Lifestyle advice could be made more actionable by providing concrete examples and encouraging shared decision-making, rather than relying solely on general instructions. Educational materials may also be adapted using large, readable fonts, pictorial information, short sentences, and step-by-step instructions, while numerical information could be presented alongside practical examples to facilitate interpretation. At the same time, simplification needs to be balanced with sufficient information to support safe and informed decisions. These strategies may provide a feasible approach to making self-management information more understandable and actionable without substantially increasing the amount of information provided.

## Abbreviations

|      |                               |
|------|-------------------------------|
| BP   | Blood pressure                |
| CHC  | Community health centre       |
| HPs  | Healthcare professionals      |
| HL   | Health literacy               |
| SMIs | Self-management interventions |

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1186/s12913-026-15734-1>.

**Acknowledgements** We would like to thank all participants involved in this study for sharing their experiences.

**Author contributions** VTN, SHSL, and HLT contributed to the conception and design of the study. VTN, SHSL, and HLT also contributed to the analysis and interpretation of the data and drafted the manuscript. SHSL and HLT provided intellectual comments and critically revised the manuscript. All authors reviewed and approved the final manuscript.

**Funding** This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

**Data availability** All the data generated during this study are included in this published article.

## Declarations

**Ethics approval and consent to participate** This study was conducted in accordance with the ethical principles of the Declaration of Helsinki. Ethical approval was obtained from the Survey and Behavioural Research Ethics Committee of The Chinese University of Hong Kong (SBRE-25-0113) and the Research Ethics Committee of the University of Medicine and Pharmacy, Hue University, Vietnam (H2025/681). Written informed consent was obtained from all participants before study participation.

**Consent for publication** Not applicable.

**Competing interests** The authors declare no competing interests.

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**Publisher's note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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