Effects of Self-management on Blood Pressure in Thai Older Adults with Hypertension: A Systematic Review and Meta-Analysis

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Extended Abstract:

Hypertension is one of the most prevalent chronic conditions among older adults and a major contributor to cardiovascular morbidity and mortality. In Thailand, the aging population is rapidly increasing, and the burden of uncontrolled hypertension among older adults presents a significant public health challenge. Effective and sustainable strategies for hypertension management are therefore essential. Self-management interventions, grounded in behavioral and theoretical frameworks, have been widely promoted as a patient-centered approach to chronic disease control. This systematic review and meta-analysis aimed to assess the effectiveness of self-management theory based interventions in reducing blood pressure among older adults with hypertension in Thailand.

A comprehensive search of both international and Thai databases—including PubMed, Embase, Scopus, and the Thai Journal Citation Index (TCI) was conducted to identify relevant studies published between January 2018 and December 2023. The review specifically included studies employing randomized controlled trial (RCT) or quasi-experimental designs involving self-management interventions targeting older adults aged 60 years and above diagnosed with hypertension. The selection process followed PRISMA guidelines. After rigorous screening and quality appraisal using the JBI Critical Appraisal Checklist for Quasi-Experimental Studies, only quasi-experimental studies were included as randomized controlled trials were absent from our search results. The results showed that five studies met the inclusion criteria. All included studies were conducted in Thailand, targeted older adults and implemented interventions grounded in self-management theoretical frameworks. These interventions commonly incorporated components such as health education, self-monitoring, behavior modification, goal setting, and reinforcement strategies, with the overarching aim of improving hypertension control and enhancing patient engagement. The five included studies encompassed a total of 379 older adults, with 188 participants assigned to various self-management intervention groups and 189 to control groups receiving usual care. Meta-analyses were conducted separately for systolic blood pressure and diastolic blood pressure outcomes using a random-effects model.

The results demonstrated statistically significant reductions in both systolic blood pressure and diastolic blood pressure in the intervention groups compared to the control groups. For diastolic blood pressure, the pooled mean difference was -9.34 mmHg (95% confidence

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Received March 24, 2025, Revised April 24, 2005, Accepted April 28, 2025

interval [CI]: −10.95 to −7.72), indicating a substantial improvement in blood pressure control associated with the interventions. The effect was statistically significant ($z = -11.32$, $p < 0.001$). Similarly, for systolic blood pressure, the meta-analysis showed a mean difference of −16.79 mmHg (95% CI: −25.21 to −8.38), also favoring the intervention groups. The effect was statistically significant ($z = -3.91$, $p < 0.001$).

Overall, the findings from this review highlight the effectiveness of self-management theory based interventions in significantly lowering both systolic and diastolic blood pressure among older adults in Thailand. These interventions not only contribute to improved clinical outcomes but also promote patient autonomy and long-term adherence to treatment regimens—key components in managing a chronic condition such as hypertension. Given the growing emphasis on person-centered care in aging populations, these results support the integration of self-management programs into routine hypertension care, particularly in community and primary care settings. Despite these positive outcomes, some limitations should be acknowledged. Notably, the number of eligible studies was relatively small, which may limit the generalizability of the findings.

Keywords: Hypertension, Meta-analysis, Older adults, Systematic review, Thailand

Author contribution:
PW: Conceptualization, data curation, software, formal analysis, investigation, methodology, project administration, writing−original draft, writing−review and editing
NP: Conceptualization, data curation, investigation, methodology, project administration, writing−review and editing, supervision, funding acquisition

ผลของการจัดการตนเองต่อระดับความดันโลหิตในผู้สูงอายุไทยที่เป็นโรคความดันโลหิตสูง : การทบทวนวรรณกรรมอย่างเป็นระบบและการวิเคราะห์อภิมาน

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บทคัดย่อขยาย :

ความดันโลหิตสูง เป็นหนึ่งในโรคเรื้อรังที่พบได้บ่อยในผู้สูงอายุ และเป็นปัจจัยสำคัญที่นำไปสู่ความเจ็บป่วยและการเสียชีวิตจากโรคหัวใจและหลอดเลือด ในประเทศไทย สัดส่วนประชากรผู้สูงอายุเพิ่มขึ้นอย่างรวดเร็ว และภาวะความดันโลหิตสูงที่ควบคุมไม่ได้ในกลุ่มนี้ถือเป็นปัญหาสำคัญด้านสาธารณสุข การพัฒนากลยุทธ์ในการจัดการความดันโลหิตสูงอย่างมีประสิทธิภาพและยั่งยืนจึงเป็นสิ่งจำเป็น กลยุทธ์แบบการจัดการตนเองซึ่งมีพื้นฐานมาจากทฤษฎีการปรับเปลี่ยนพฤติกรรม ถือเป็นแนวทางสำคัญที่ได้รับการส่งเสริมอย่างแพร่หลายในระบบการดูแลสุขภาพ โดยเน้นการมีส่วนร่วมของผู้ป่วยเป็นศูนย์กลางในการควบคุมโรคความดันโลหิตสูงอย่างมีประสิทธิภาพ การทบทวนวรรณกรรมอย่างเป็นระบบและการวิเคราะห์อภิมานครั้งนี้มีวัตถุประสงค์เพื่อประเมินประสิทธิผลของการจัดการตนเองในการลดความดันโลหิตในผู้สูงอายุที่เป็นโรคความดันโลหิตสูงในประเทศไทย

การสืบค้นข้อมูลใช้ฐานข้อมูลทั้งในระดับนานาชาติและในประเทศทั้งหมด 4 ฐาน ได้แก่ PubMed, Embase, Scopus และ Thai-Journal Citation Index (TCI) โดยดำเนินการค้นหาบทความวิจัยที่เผยแพร่ระหว่างเดือนมกราคม พ.ศ. 2561 ถึงเดือนธันวาคม พ.ศ. 2566 การทบทวนมุ่งเน้นเฉพาะงานวิจัยที่ใช้รูปแบบการทดลองแบบสุ่มที่มีกลุ่มควบคุม (randomized controlled trial: RCT) หรือแบบกึ่งทดลอง (quasi-experimental) โดยใช้รูปแบบการจัดการตนเองในผู้สูงอายุที่มีอายุ 60 ปีขึ้นไป และได้รับการวินิจฉัยว่าเป็นโรคความดันโลหิตสูง โดยกระบวนการคัดเลือกเป็นไปตามแนวทาง PRISMA หลังจากผ่านการคัดกรองและประเมินคุณภาพอย่างเคร่งครัดโดยใช้เครื่องมือ JBI Critical Appraisal Checklist for Quasi-Experimental Studies พบว่าไม่มีงานวิจัยแบบ RCT ที่เข้าเกณฑ์ จึงคงไว้เฉพาะงานวิจัยแบบกึ่งทดลองเท่านั้น

ผลการสืบค้นพบงานวิจัยที่เข้าเกณฑ์ทั้งหมด 5 ฉบับ ซึ่งทั้งหมดเป็นการศึกษาในประเทศไทย มุ่งเน้นกลุ่มประชากรผู้สูงอายุ และใช้โปรแกรมการทดลองที่มีพื้นฐานจากกรอบแนวคิดด้านการจัดการตนเอง โดยทั่วไปโปรแกรมการจัดการตนเองประกอบด้วยองค์ประกอบ เช่น การให้ความรู้ด้านสุขภาพ การติดตามสุขภาพตนเอง การปรับเปลี่ยนพฤติกรรม การตั้งเป้าหมาย

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และกลยุทธ์การเสริมแรง โดยมีเป้าหมายเพื่อควบคุมความดันโลหิตให้ดีขึ้นและส่งเสริมการมีส่วนร่วมของผู้ป่วย

งานวิจัยทั้ง 5 ฉบับรวมกลุ่มตัวอย่างทั้งหมด 379 ราย โดยแบ่งเป็นกลุ่มทดลอง 188 ราย ที่ได้รับโปรแกรมการทดลองการจัดการตนเองที่มีรูปแบบหลากหลาย และกลุ่มควบคุม 189 ราย ซึ่งได้รับการดูแลตามแนวทางปกติ มีการวิเคราะห์อภิมาน ผลลัพธ์แยกตามค่าความดันโลหิตซิสโตลิกและไดแอสโตลิก โดยใช้แบบจำลองสุ่ม (random-effects model) พบว่าในกลุ่มที่ได้รับโปรแกรมการจัดการตนเอง มีระดับความดันโลหิตทั้งสองประเภทลดลงอย่างมีนัยสำคัญทางสถิติเมื่อเทียบกับกลุ่มควบคุม

ผลการทดลองพบว่าความดันโลหิตไดแอสโตลิก ค่าเฉลี่ยความแตกต่างแบบรวม (pooled mean difference) อยู่ที่ -9.34 มม.ปรอท (95% CI: -10.95 ถึง -7.72) โดยผลมีนัยสำคัญทางสถิติ ($z = -11.32$, $p < 0.001$) ชี้ให้เห็นว่าการจัดการตนเองสามารถช่วยในการควบคุมความดันโลหิตได้ดี ส่วนความดันโลหิตซิสโตลิก มีค่าเฉลี่ยความแตกต่างแบบรวมอยู่ที่ -16.79 มม.ปรอท (95% CI: -25.21 ถึง -8.38) และมีนัยสำคัญทางสถิติ ($z = -3.91$, $p < 0.001$) เช่นกัน

ผลการศึกษานี้ชี้ให้เห็นว่า รูปแบบการจัดการตนเอง ที่มีพื้นฐานมาจากทฤษฎีการจัดการตนเองมีประสิทธิผลอย่างมีนัยสำคัญในการลดความดันโลหิตทั้งซิสโตลิกและไดแอสโตลิกในผู้สูงอายุไทย รูปแบบดังกล่าวนี้ไม่เพียงส่งผลดีต่อผลลัพธ์ทางคลินิก แต่ยังส่งเสริมการตัดสินใจของผู้ป่วยด้วยตนเอง และการปฏิบัติตามแผนการรักษาในระยะยาว ซึ่งล้วนเป็นองค์ประกอบสำคัญในการดูแลโรคความดันโลหิตสูงแบบองค์รวมและเน้นผู้ป่วยเป็นศูนย์กลาง ข้อค้นพบนี้จึงสนับสนุนให้มีการบูรณาการโปรแกรมการจัดการตนเองเข้าสู่แนวทางการดูแลผู้ป่วยความดันโลหิตสูงในระดับชุมชนและบริการปฐมภูมิอย่างเป็นระบบ อย่างไรก็ตาม แม้จะมีผลลัพธ์ที่น่าสนับสนุน แต่ก็ยังมีข้อจำกัดบางประการ โดยเฉพาะอย่างยิ่งจำนวนงานวิจัยที่เข้าเกณฑ์ซึ่งค่อนข้างน้อย อาจจำกัดความสามารถในการนำไปใช้ของผลการศึกษา

คำสำคัญ : ความดันโลหิตสูง การวิเคราะห์อภิมาน ผู้สูงอายุ การทบทวนวรรณกรรมอย่างเป็นระบบ ประเทศไทย

Introduction

Non-communicable diseases (NCDs) persist as a significant global public health concern. Moreover, statistical data reveal an annual mortality rate of 41 million individuals, constituting 74% of the worldwide mortality rate.[1] In Thailand, NCDs represent the foremost health challenge consistent with the global health landscape, responsible for more than 70% of all fatalities.[2] NCDs pose a significant health threat, particularly among the older population. This is attributed to the physiological changes associated with aging, where the body gradually deteriorates combined with NCDs. A common consequence of NCDs is the predisposition of individuals to a spectrum of diseases. NCDs of particular concern in Thailand include hypertension (HT), with its incidence increasing with age.

The incidence of HT progressively increases with age, reaching 76.8% in adults aged 80 years and older.[3] HT is a major public health concern, particularly among older adults, as it significantly elevates the risk of cardiovascular diseases, stroke, and mortality. Globally, HT contributes to a minimum of 45% cardiovascular-related mortalities and 51% of stroke-related mortalities worldwide.[4] Achieving satisfactory control of blood pressure is often elusive, even with the administration of diverse medications and supplementary treatment modalities.[5] However, intensive blood pressure management has also been associated with results in a 22% reduction in stroke recurrence.[6] HT is a chronic condition that remains incurable. Consequently, achieving and maintaining optimal blood pressure levels is a key objective in mitigating complications, particularly among older adults. A significant strategy in this regard is self-management. Self-management strategies encompass patient education, monitoring clinical indicators and behaviors (such as diet, exercise, smoking, and alcohol consumption), adjustment of medical treatment as needed, and adherence to prescribed medication regimens with appropriate support.[7]

In Thailand, controls of blood pressure were found to be effective in several studies focusing on intervention management. However, previous studies employed diverse theoretical frameworks and outcome assessments. Additionally, there is no systematic reviews specifically focusing on interventions incorporating self-management for HT among older adults in Thailand. Thus, this systematic review and meta-analysis aims to evaluate the effectiveness of self-management interventions in controlling HT among older Thais. As the first meta-analysis focusing on this population, it provides valuable insights into self-management strategies that may improve HT control and promote better long-term health outcomes.

Materials and methods

This systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines[7] and is registered on the PROSPERO platform under the identification code CRD420251015667.

Literature search strategy

A comprehensive systematic search was conducted across four major online databases, integrating both Thai and English sources by two independents review. The selected databases including

1) PubMed, 2) Embase, 3) Scopus, and 4) Thai-Journal Citation Index Centre (TCI) were explored for relevant publications spanning from January 2018 to December 2023. The search strategy was structured according to the PICO framework, as outlined in Table 1.

Table 1 PICO framework guiding the literature search

Parameters	Inclusion criteria
P (Population)	Older adults in Thailand aged 60 years or over with hypertension
I (Intervention)	Self-management theory interventions
C (Comparison)	Usual care or standard treatment
O (Outcomes)	Blood pressure control (systolic blood pressure, diastolic blood pressure)

We established a search strategy was structured based on the PICO framework using keywords including: Older adults ("elderly people" or "older people" or "seniors" or "late life" or "older patients" or "aging people" or "geriatric people") AND self-management theory intervention ("self-management" or "self-management support" or "self - management concept") AND Hypertension ("blood pressure" or "systolic blood pressure" or "diastolic blood pressure")

Inclusion and exclusion criteria

The inclusion criteria for this review were as follows: (1) studies available as full-text publications; (2) participants aged 60 years and older; (3) individuals clinically diagnosed with hypertension by a healthcare professional; (4) studies reporting outcomes related to blood pressure; and (5) experimental study designs, including randomized controlled trials (RCTs) and quasi-experimental studies. The exclusion criteria were: (1) non-original research, such as reviews, conference abstracts, and animal studies; (2) publications not written in English or Thai; and (3) studies examining combined or multimodal interventions for comorbid conditions beyond hypertension.

Study selection process and data extraction

The data extraction process was conducted systematically to gather essential information from the included studies. Key elements extracted comprised: (1) author(s), (2) sample size, (3) study design, (4) type of intervention, (5) core components of the intervention, (6) outcomes, and (7) duration of the intervention. A rigorous screening procedure was applied to ensure the accuracy and relevance of all articles included in the analysis. Each study underwent thorough evaluation, and consensus was achieved through independent reviews and subsequent discussions between two independent reviewers.

Statistical analysis

Statistical analysis was conducted using JBI SUMARI software for meta-analysis. In instances where data synthesis was not feasible, the findings were presented narratively, with tables used to support data visualization. Continuous outcomes assessed using the same measurement tools were analyzed using mean difference (MD) and 95% confidence intervals (CI). A significant level of $p < 0.05$ was applied. Study heterogeneity was evaluated using the I^2 statistic, with values of 25%, 50%, and 75% interpreted as indicating low, moderate, and high

heterogeneity, respectively. Additionally, substantial heterogeneity was considered when the chi-square test (χ^2) yielded a p-value of less than 0.1.

Quality assessments

The risk of bias was independently assessed using the JBI Critical Appraisal Checklist for Quasi-Experimental Studies. This tool evaluates various methodological aspects, including clarity of objectives, comparability of participants, consistency of treatment between groups, presence of a control group, repeated outcome measurements, completeness of follow-up, reliability and consistency in outcome assessment, and appropriateness of statistical analysis. Each domain was rated as "yes," "no," "unclear," or "not applicable." The appraisal was conducted independently in a blinded manner, with discrepancies resolved through team discussion. Studies meeting at least 60% of the criteria were considered eligible for inclusion.

Results

Study selection

A total of 205 records were initially identified through a systematic and transparent search process, with 27 from PubMed, 82 from Embase, 54 from Scopus, and 42 from the Thai-Journal Citation Index (TCI). All records were imported into EndNote reference management software, and 48 duplicates were removed. The remaining 157 records were screened based on their titles and abstracts, resulting in the exclusion of 125 records that did not meet the inclusion criteria. A full-text review was conducted for the remaining 32 articles, of which 27 were excluded. Ultimately, 5 studies met all eligibility criteria[8-12] and were included in the final analysis. The overall selection process is illustrated in the PRISMA flow diagram (Figure 1).

Study characteristics

This systematic review and meta-analysis included five quasi-experimental studies[8-12] involving a total of 379 older adults. Sample sizes ranged from 50 to 151 participants, and all studies included both male and female individuals aged 60 years and above. The interventions included shared key features, such as the use of a control group and the availability of sufficient statistical data for meta-analytic synthesis. Conducted across diverse settings, these studies implemented structured self-management programs designed to support blood pressure control. The duration of the interventions ranged from 8 to 16 weeks. The specific components of the self-management interventions are summarized in Table 1.

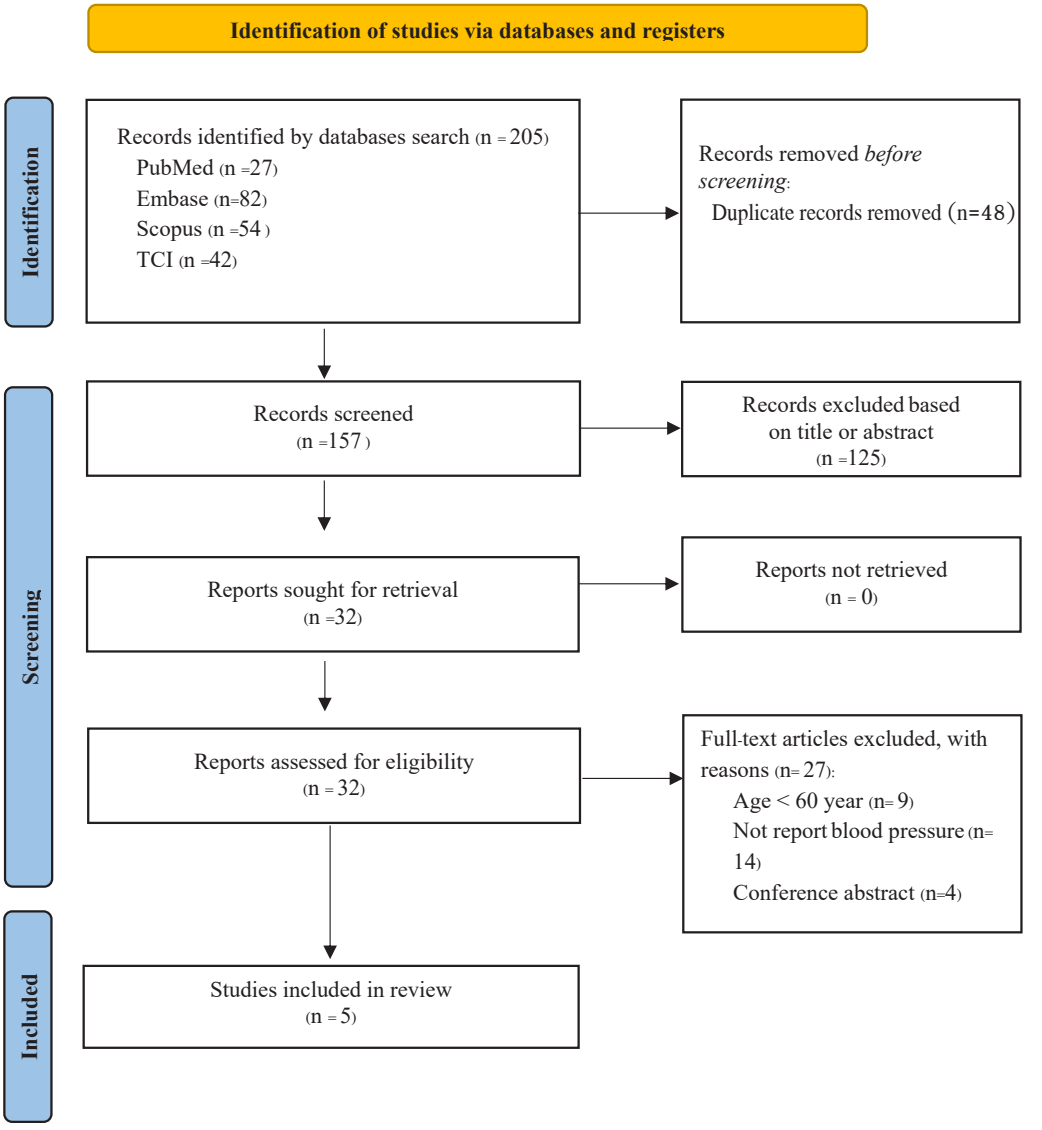

Figure 1 PRISMA flow diagram of the study selection process

Table 1 Summary of self-management and related interventions for hypertension control

Author	Sample Size (N)	Study design	Types of Interventions	Core intervention component	Duration(week)	Outcomes
Wannakhao et al., 2019[8]	60 (30/30)	Quasi-experimental	Self-Management Interventions	Self-management program of Lorig and Holman's self-management concept: • Health education • Self-management • A teaching plan • A self-management behavior manual.	8 weeks	**Decreased** systolic and diastolic blood pressure
Sungkhao et al., 2020[9]	62 (31/31)	Quasi-experimental	Self-Management Support Interventions	Self-management support program on medication adherence and blood pressure level by using the concept of 5 As' model of self-management support. • Assess • Advise • Agree • Assist • Arrange	6 weeks	**Decreased** systolic and diastolic blood pressure
Dankasai et al., 2022[10]	50 (25/25)	Quasi-experimental	Self-Management Promotion Interventions	Self-management support program developed according to Kanfer's concept and Briesch & Chafoulea including self-monitoring, self-evaluation, self-recording, and self-reinforcement: • Health education • Telephone once a week Telephone once a week Home Visit once a week.	8 weeks	**Decreased** systolic and diastolic blood pressure
Phetmanee et al., 2022[11]	56 (27/29)	Quasi-experimental	Self-Management Support Intervention	Self-management support program developed according to Kanfer's concept including Self- monitoring, Self – evaluation, and Self – reinforcement:	8 weeks	**Decreased** systolic and diastolic blood pressure

Table 1 Summary of self-management and related interventions for hypertension control (Con't)

Author	Sample Size (N)	Study design	Types of Interventions	Core intervention component	Duration(week)	Outcomes
				• Self-motivation for self-management • Skill training • Self-monitoring of blood pressure • Home visit by village health volunteer • Home visit by nurse and multi-disciplinary team • A telephone consultation		
Sukpattanasrikul et al., 2022[12]	151 (76/75)	Quasi-experimental	Self-management Intervention	Self-management program was developed based on the individual and family self-management theory: • Self-management process (from the 1st to 4th weeks) • A follow-up phase (from the 5th to 16th weeks)	16 weeks	**Decreased** systolic and diastolic blood pressure

Meta-analysis

This systematic review and meta-analysis examined the effectiveness of self-management interventions in managing HT. The primary outcomes evaluated were systolic and diastolic blood pressure.

Effects of self-management intervention on systolic blood pressure

A total of 188 older adults received various self-management interventions for HT management, while 189 participants were assigned to control groups. The pooled results demonstrated a significant reduction in systolic blood pressure among those in the intervention groups, with a mean difference of -16.79 mmHg (95% CI:-25.21 to-8.38). Substantial heterogeneity was observed (I^2 = 94%), and the overall effect was statistically significant (z = -3.91, p < 0.001), as illustrated in Figure 2.

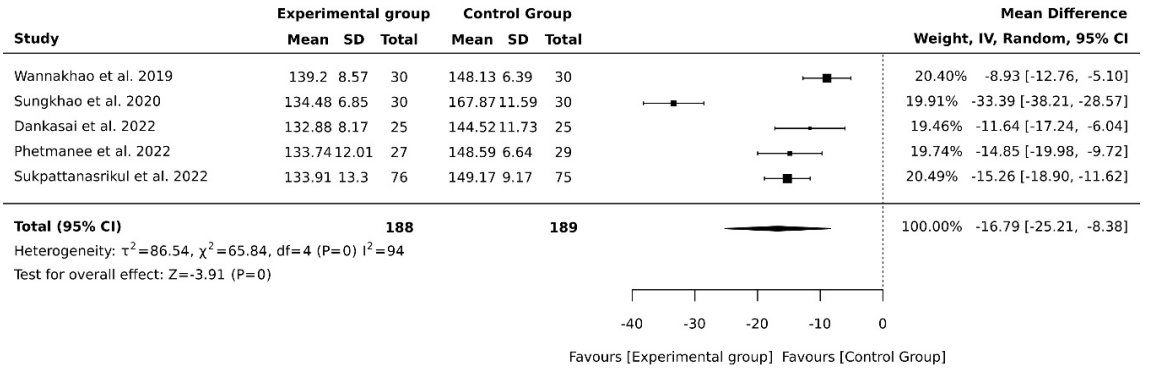

Figure 2 Forest plot of self-management on systolic blood pressure in Thai older adults with hypertension

Effects of self-management intervention on diastolic blood pressure

A total of 188 older adults received various self-management interventions for HT management, while 189 participants were assigned to control groups. The pooled results demonstrated a significant reduction in diastolic blood pressure among those in the intervention groups, with a mean difference of -9.34 mmHg (95% CI: -10.95 to -7.72). Substantial heterogeneity was observed (I^2 = 0%), and the overall effect was statistically significant (z = -11.32, p < 0.001), as illustrated in Figure 3.

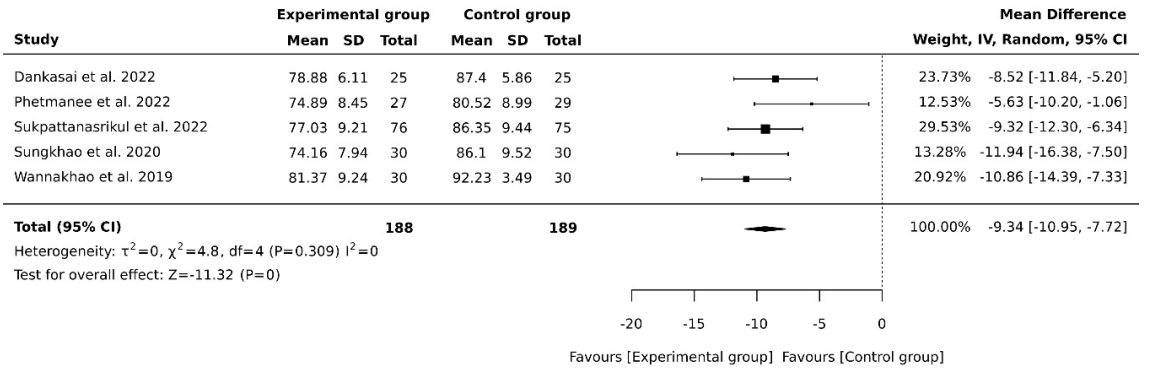

Figure 3 Forest plot of self-management on diastolic blood pressure in Thai older adults with hypertension

Quality assessment

The quality of the included studies was evaluated using the JBI Critical Appraisal Checklist for Quasi-Experimental Studies. This assessment determined the methodological rigor and overall evidence quality of the five studies included in this systematic review.

The quality of the quasi-experimental studies included was assessed using the JBI Critical Appraisal Checklist. The appraisal included nine items rated as "Yes," "No," "Unclear," or "Not applicable." All five studies demonstrated high methodological quality, with all appraisal items rated as "Yes," resulting in an overall quality score of 100% for each study. None of the studies exhibited issues related to participant comparability, measurement consistency, completeness of follow-up, or statistical analysis. Additionally, each study clearly distinguished between the cause and effect, provided multiple outcome measurements, and included a control group. These findings indicate a low risk of bias across all included studies (Table 2).

Table 2 Quality appraisal

JBI Critical Appraisal of Eligible Quasi-Experimental Study

Studies	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Total score
Wannakhao et al., 2019	Y	Y	Y	Y	Y	Y	Y	Y	Y	9/9
Sungkhao et al., 2020	Y	Y	Y	Y	Y	Y	Y	Y	Y	9/9
Dankasai et al., 2022	Y	Y	Y	Y	Y	Y	Y	Y	Y	9/9
Phetmanee et al., 2022	Y	Y	Y	Y	Y	Y	Y	Y	Y	9/9
Sukpattanasrikul et al., 2022	Y	Y	Y	Y	Y	Y	Y	Y	Y	9/9

Y: Yes; N: No; U: Unclear; NA: Not applicable

JBI Critical Appraisal of Eligible Quasi-Experimental Study

1. Is it clear in the study what is the 'cause' and what is the 'effect' (i.e. there is no confusion about which variable comes first)?

2. Were the participants included in any comparisons similar?

3. Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?

4. Was there a control group?

5. Were there multiple measurements of the outcome both pre and post the intervention/exposure?

6. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?

7. Were the outcomes of participants included in any comparisons measured in the same way?

8. Were outcomes measured in a reliable way?

9. Was appropriate statistical analysis used?

Discussion

This systematic review and meta-analysis evaluated the effectiveness of self-management theory-based interventions for the management of HT. Among older adults in Thailand, the interventions were designed based on theoretical frameworks emphasizing self-management principles. The findings indicate that such interventions result in significant reductions in both systolic and diastolic blood pressure, underscoring their value as effective strategies for blood pressure control in this population.[13]

A pooled analysis showed a substantial reduction in systolic blood pressure (-16.79 mmHg) and diastolic blood pressure (-9.34 mmHg) compared to usual care. These results align with prior meta-analyses demonstrating the effectiveness of self-management approaches—including education, self-monitoring, and behavioral strategies—for hypertension management across various populations.[13] Furthermore, the findings are consistent with clinical guidelines that advocate for a comprehensive approach to hypertension management, combining pharmacological treatment with lifestyle modification.

According to the World Health Organization (WHO), self-management refers to an individual's ability to take responsibility for managing their health conditions, either independently or in collaboration with healthcare providers.[15] Core components of self-management include health education, monitoring of clinical indicators, behavioral adjustments (e.g., healthy diet, exercise, smoking cessation, alcohol moderation), medication titration where applicable, and support systems to enhance adherence to prescribed regimens. In alignment with this definition, our review found that self-management interventions delivered over 6 to 16 weeks effectively improved blood pressure control in older Thai adults with HT.

This is particularly relevant given that elevated blood pressure—defined as systolic blood pressure >140 mmHg or diastolic blood pressure > 90 mmHg—is a leading risk factor for cardiovascular morbidity and mortality.[16] Evidence strongly supports the role of self-management in fostering healthy behaviors and improving medication adherence, both of which are central to effective HT control.[17,18]

Across the five included studies,[8-12] various self-management strategies were employed, such as health education, lifestyle modification, home BP monitoring, and structured support for medication adherence. These components reflect key domains of effective self-management, aiming to enhance knowledge, promote sustainable behavioral change, and foster long-term adherence. Medication adherence, in particular, emerged as a crucial factor in achieving BP reduction, especially when interventions included regular follow-up, counseling, or caregiver involvement.

These findings are consistent with previous research demonstrating the efficacy of self-management interventions in blood pressure control.[16] Moreover, the magnitude of change in systolic blood pressure and diastolic blood pressure observed in our study is comparable to earlier meta-analyses examining the impact of self-monitoring and face-to-face lifestyle counseling.[20-22]

Given the rising prevalence of hypertension globally, exploring innovative strategies for hypertension management is imperative. One promising direction involves the integration of digital technologies, such as mHealth and eHealth platforms, into self-management programs. These technologies offer accessible and flexible solutions to enhance patient engagement and self-monitoring. Previous meta-analyses have shown that self-management supported by mHealth and eHealth tools can significantly reduce systolic blood pressure and diastolic blood pressure.[20,17]

Importantly, this review is the first to focus specifically on self-management theory-based interventions for older adults with hypertension in Thailand. A rigorous methodology was applied, including comprehensive database searches, quality appraisal checklist, and meta-analysis of clinically relevant outcomes. However, several limitations should be acknowledged. The number of included studies was limited, and all were quasi-experimental in design, which may increase the potential risk of bias and reduce the generalizability of findings.

Conclusions

Self-management interventions demonstrate notable effectiveness in reducing both systolic and diastolic blood pressure among older adults in Thailand. These findings highlight the value of integrating self-management strategies—such as patient education, behavior modification, and self-monitoring—into routine HT care for this population. Beyond improving blood pressure outcomes, such interventions may also enhance patient engagement, promote health literacy, and support sustained adherence to treatment regimens. Healthcare professionals, particularly nurses, are encouraged to incorporate self-management approaches tailored to the needs of older adults as part of a comprehensive HT management plan. Further research is warranted to investigate the long-term impacts and to identify the most effective implementation models within the Thai healthcare system.

Funding

This study was supported by the Faculty of Medicine Ramathibodi Hospital, Mahidol University.

Acknowledgements

The authors would like to acknowledge the support provided by the Center of Health Promotion and Well-Being, the JBI Evidence-Based Healthcare Ramathibodi School of Nursing Center, University of Adelaide, Australia and Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand

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