

Development of a capacity-building program for older adults on health management and promotion for older adults in urban communities, Bangkok Metropolis

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ABSTRACT

Development of a capacity-building program for older adults in health management and promotion is necessary for readiness for the complete-aged society in Thailand. Little is known about programs that reinforce older adults' capacities in health management and promotion in urban communities. This research and development design aimed to develop and determine the effects of a capacity-building program on health management and promotion for older adults in urban communities. A program was held in two sections totaling 90 hours, including coursework and practical sections. This program covered health education, chronic condition management, and health promotion for older adults. The program was evaluated for appropriateness and feasibility by five experts. Forty-four older adults met the criteria and were selected by simple random sampling from nine communities. Data were collected using questionnaires at baseline, post-intervention, and a 1-month follow-up after the end of the intervention. The instruments used for data collection included a demographic questionnaire, a self-assessment on the capacity of older adults, and a self-assessment competency questionnaire on health management and promotion. Descriptive statistics and paired sample *t*-test were used for the data analysis. After the intervention, the findings showed that the mean score of the capacity of older adults was significantly higher than before receiving the intervention (38.61 ± 4.03 , $p < .001$). When comparing each dimension, the results found the mean scores for knowledge, attitude, and capacity for health management and promotion of older adults to be 11.77 ± 1.79 , $p < .001$, $4.09 \pm .39$, $p < .001$, $3.72 \pm .057$, $p < .001$, respectively. The one-month follow-up revealed that most older adults had a moderate (53.3%) and high (46.5%) level of health management and promotion competency. This study indicates that the capacity-building program for older adults is effective and needs to be implemented in urban communities.

Key words:

capacity-building program; older adults in urban communities; management and health promotion

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INTRODUCTION

Thailand has become an aging society, with older adults comprising more than 10% of the population. The aging population was approximately 11.3 million and accounted for 17.5% of the total population in 2020.¹ Bangkok is the capital of Thailand and has the largest aging population. In 2021, the number of older adults increased to 18.78% of Bangkok's population.² Due to changes in family structure and economic conditions, the health conditions of older adults have complexities.

A previous study reported that most older adults dwelling in urban communities had several diseases, including dyslipidemia (83%), hypertension (76%), and diabetes (53%). These diseases are caused by consumer behaviors such as diets involving fast, salty, sweet, greasy, processed, and packaged food. In addition, the study revealed that 10% of the older adults dwelling in urban communities in Bangkok were bedridden patients. Those patients had physical-health problems, including polypharmacy, incontinence, and sleep disorders, 28.3%, 7.6%, and 7.6%, respectively.³ Bedridden patients who live in communities need more assistance from healthcare providers and caregivers, both formal and informal, for physical, psychological, social, and spiritual care needs. They also need rehabilitation and long-term care support.⁴ Unfortunately, most older adults who live alone or with a spouse tend to have an increasing need for dependence on other relatives, friends, and neighbors in communities.⁵ Thus, older adults with a high capacity for self-care and health management living in communities may play a significant role in social care support.

According to the 2nd Thai National Plan on the Elderly (2002-2021), revised in 2018 by the Ministry of Social Development and Human Security, the strategy for readiness preparation of the

people for quality aging focuses on the participation of Thai citizens, communities, and the government as well as private sector organizations. This plan also encourages stable security, access to appropriate welfare and services, and the development of education services and lifelong learning in older adults. Importantly, there is a need to raise social awareness about respecting older adults and recognizing older adults' values and dignity in society, which should be enhanced as long as possible.⁶ Moreover, dependent older adults should receive good care from health care services, families, and communities.

Recently, several studies have shown that discovering older adults' capacity in communities and promoting the use of their capacity involves social investment and recognition in communities. Most older adults perceive their values and power to care for themselves as well as friends and neighbors in their communities. Those older adults can be leaders in health care activities and health promotion such as basic health assessments and screening, establishing older adult clubs for health promotion, and developing innovations based on individual contexts. For the frail and dependent groups, stronger healthier older adults can conduct home visits and transfer healthcare information to their community networks. As a result, enhancing the capacity of older adults in communities is crucial in developing friendly communities for older adult care.⁷⁻¹⁰ Nevertheless, older adult volunteers with a high capacity for health care can sufficiently care for other older adults in the community. Interestingly, most older adults have good relationships with society, realize their values after retirement, and are respected by the community.¹⁰ Retired older adults who can take good care of themselves may motivate themselves to be volunteers and find meaning in their lives. Volunteering can increase older adults' social activities in the

communities and make them proud of themselves for doing things to benefit society.¹¹

Building the capacity of older adults in health promotion and management to take care of others is necessary for the context of urban communities in Bangkok. However, one study reported that village health volunteers did not meet their needs in terms of knowledge to provide care for older adults. Materials and information support were also deficient, particularly concerning physical and emotional support. Unfortunately, village health volunteers do not have sufficient health literacy concerning the care of other older adults and do not meet the needs for health promotion among older adults in communities.¹² As the number of older adults in Bangkok is projected to increase, little is known about programs reinforcing older adults' capacity for health management and promotion in urban communities. Reinforcing older adults' capacities can enhance the older adults' capacities in health management and promotion and support the 12th national health development plan as a proactive healthcare service approach of the Ministry of Public Health. The program may formulate the frameworks or guidelines for further developing the older adults' capacity in health care for urban communities.

RESEARCH OBJECTIVES

The purposes of this study were 1) to develop a capacity-building program on health management and promotion for older adults in urban communities; 2) to determine the effects of the capacity-building program on health management and promotion for older adults in urban communities, and 3) to evaluate the competence in health management and promotion for older adults in urban communities.

METHOD

Research Design

A research and development design was employed and divided into the following three phases.

Phase 1 involved developing a program (curriculum) and research instruments such as the health literacy instruments, the instrument for measuring the capacity of older adults, and the competency instrument of older adults. A descriptive study was used to explore health literacy and the capacity of older adults in management and health promotion for investigation before enrollment in Phase 2.

Phase 2 involved implementing the program. An experimental study with a one-group pre-posttest design was employed in this study.

Lastly, Phase 3 involved evaluating the competency of older adults after finishing the program at one month.

Participants

The target population of this study (from Phase 1) was 196 older adults from 10 urban communities in Dusit District, Bangkok, Thailand, with stratified random sampling using the ratio of older adults in each community. Next, simple random sampling was used with each community's list of older adults.

The sample size was calculated using the G* Power analysis program (Version 3.1.9.2)¹³, which allowed for an error of 0.05, power (1- β) of 0.9 from a previous study¹⁴, and a medium effect size of 0.5¹⁵ for investigation among older adults living in urban communities. Therefore, 44 participants were enrolled in this study. Nevertheless, the intervention was time-consuming and, to account for participants who were unable to complete the program, a 20% attrition rate was

allowed. As a result, a sample size of 53 participants was assigned to this study.

The inclusion criteria for the participants in this study included Thai older adults aged 60 years or over, who were living in Dusit District, Bangkok, Thailand. Older adults who could communicate well and use digital communication, such as an iPad or smartphone, were recruited. Moreover, older adults who underwent screening using the Barthel ADL index,¹⁶⁻¹⁷ with scores of 12 or more, and those who had been investigated with the Mental State Examination T10¹⁸ and found to have no dementia, except those who were public health volunteers or community leaders, were recruited. Importantly, older adults who had a moderate or higher level of attitude, knowledge, and health literacy were recruited. The older adults who developed advanced complications of disease during the study and those who participated in the program for less than 80% of the total 90 hours were excluded from participation.

Intervention Program

The researchers developed the capacity-building program based on the active aging concept proposed by WHO¹⁹ consisting of two sections, a coursework section (48 hours) and a practical section (42 hours), totaling 90 hours. The program focused on the knowledge needed for older adults living in urban communities. The content of the program was evaluated for appropriateness and feasibility by five experts and corrected based on their suggestions.

Over three weeks, a coursework section was provided with teaching by both online classes via Zoom meetings and face-to-face on-site classes. The participants attended education activities from Monday to Friday for 3-5 hours per day. The capacity-building program focused on the knowledge needed for older adults living in urban communities.

At Week 1, the participants attended education activities via Zoom meetings on topics such as the situation of older adults in Thailand, ethics and attitude toward taking care of older adults, diet and nutrition/enteral feeding, medication use in older adults, and common musculoskeletal conditions in older adults and rehabilitation.

At Week 2, the online and on-site classes were delivered with necessary education activities for older adults. The participants received knowledge about common diseases in older adults and care, activities of daily living assessment, cognitive impairment assessment, Covid-19 and prevention. The participants were also trained and practiced in first aid situations, basic life support (BLS), and transfer in emergency cases. Information about palliative care as an advance directive care plan and the mixed Buddhist and Thai wisdom for older adults were provided. Physical and recreational activities, rehabilitation, and the use of digital technologies with instruction on how to access applications for health care were delivered. Interestingly, a workshop for developing projects for funding support with an expert in the Bangkok Fund was also provided.

At Week 3, the participants were divided into small groups and trained regarding the proper measurement of vital signs and self-monitoring of blood glucose and health management in the learning resources center with the nursing instructors. After completing the coursework, visits to places in a hospital such as the stress test room, the hemodialysis unit, the rehabilitation center, the diabetes and foot clinic, and the ostomy and wound care clinic were provided.

At Week 4, the researchers conducted practical sections totaling 42 hours. The participants practiced assessment of health problems and were provided health education on the case studies in their communities under the

responsibility of nursing instructors throughout the practice with Covid-19 preventive guidelines.

At Week 5, a reflective conference was provided with sharing and learning together. The volunteer participants from each community shared and discussed health problems and behaviors, health management, and promotion together in the class. After completing the program, participants were asked open-ended questions to evaluate the provided program. Their valued recommendations will be added to this program in the future.

At the end of the discussion, the participants were asked to complete the older adult capacity assessment questionnaire as the outcome assessment, including knowledge, attitude, and capacity of practice in health management and promotion. Lastly, the participants were asked to visit their communities for a follow-up phase in the next month for outcome assessment.

Instruments

Data were collected between January and May 2022 via interview questionnaires before receiving the program (Phase 1), after finishing the program (Phase 2), and in the follow-up phase after completing the program for one month (Phase 3). Data on socio-demographics and clinical characteristics included gender, age, education level, and medical condition.

The older adult capacity assessment measured three dimensions, knowledge, attitude, and capacity, for practice in health management and promotion. The researchers developed this instrument. The first dimension of knowledge contained 15 items (1=true, 0=false, 0=not sure) for general knowledge about older adults, health management; dependent older adult care, mental and cognitive screening,

medication adherence behaviors, and health promotion, exercise and healthy food. The second dimension measured older adults' attitudes toward gerontological care with 15 negative and positive items ranging from 1 (strongly disagree) to 5 (strongly agree). The last dimension measured the capacity of health management and promotion practice, consisting of 20 items on physical-health management, psychological and mental-health management, physical and recreational activities, rehabilitation, and the use of digital technologies for health care. This dimension ranged in the frequency of practice from 1 (rarely) to 5 (frequently).

Therefore, this instrument contained a total of 50 items and was tested for content validity by five professionals. The content validity index (CVI) ranged from 0.81 to 0.97. Reliability levels were reported at 0.81 for the attitude dimension and 0.97 for the capacity of practice from Cronbach's alpha coefficient analysis. A reliability level of the knowledge dimension at 0.88 was obtained by the Kuder Richardson (KR-20) analysis.

The researchers developed a self-assessment competency questionnaire for older adults with high capacity in health management and promotion containing 20 items. This instrument ranged in the self-confidence of practice from 1 (strongly disagree) to 4 (strongly agree). This instrument reported a CVI of 1 and a reliability level of 0.97 from Cronbach's alpha coefficient analysis.

Statistical Analysis

The data were analyzed by SPSS (Version 26). Descriptive statistics were used to analyze the participants' characteristics, including frequency, percentage, mean, and standard deviation. The data normality test was conducted with

the Shapiro-Wilk test and resulted in a normal distribution. Dependent sample *t*-test was used to compare mean values before and after receiving the intervention. The results are presented in mean and standard deviation (SD). All differences were considered significant at a *p*-value of less than .05.

Ethical Approval

This study was approved by the Central Research Ethics Committee (CREC) in Thailand (No. COA-CREC083/2021) following the 1964 Declaration of Helsinki, The Belmont Report, CIOMS Guidelines, and the International Conference on Harmonization Good Clinical Practice (ICH GCP) guidelines.

RESULTS

Forty-four out of 196 eligible participants were recruited, and 53 participants signed the informed consent form. Forty-four participants completed the study towards the end of the intervention and participated in the program for at least 80% of the time (72 hours), totaling 90 hours. Only one participant was lost in the follow-up phase. As a result, 43 participants completed the follow-up outcome assessment. Thus, this study's attrition rate ranged from 16.98% to 18.86% of the total participants. Therefore, data were analyzed by using 44 participants in Phase 2 and 43 participants in Phase 3, as shown in Figure 1.

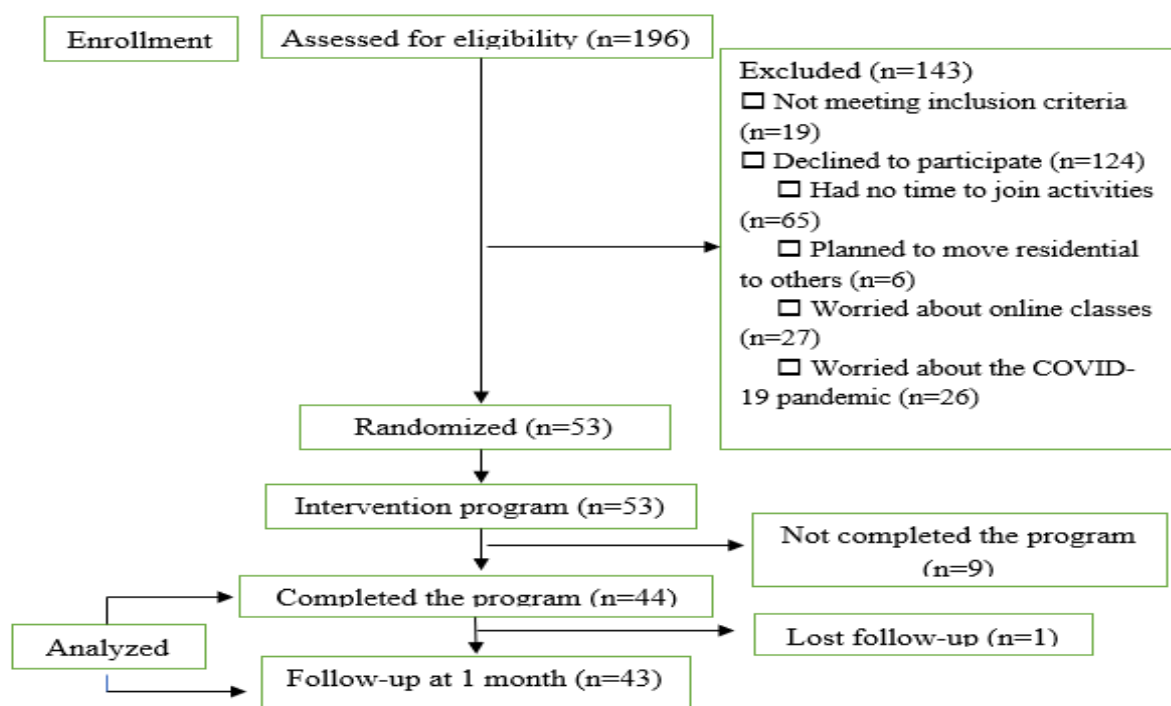


Figure 1

Demographic Description

According to Table 1, 44 older adults completed the program, and participation was 80% or over. The age range was 60 to 82 years, and more than three-fifths of the older adults (34, 77.2%)

were aged 60 to 69 years. The mean age of the older adults was 66.5 years (SD:5.38). Approximately 75% were females, and 25% were males. The level of education of the majority of the older adults was at primary school (12, 27.3%), lower

secondary school (10, 22.7%), upper secondary school (12, 22.7%), and bachelor's degree (10, 22.7%). The chronic diseases of the majority of older adults were hypertension (19, 43.2%), dyslipidemia

(12, 27.3%), and diabetes (12, 27.3%). Fortunately, almost one-third of the older adults (14, 31.8%) were in excellent health and without any conditions.

Table 1 General characteristics and medical conditions (n=44).

Characteristics	Number	%	Mean	SD
Age (years)			66.55	5.39
60-69	34	77.2		
70-79	8	18.2		
80-89	2	4.6		
Min. = 60, Max. = 82				
Gender				
Male	11	25.0		
Female	33	75.0		
Education				
Primary School	12	27.3		
Lower Secondary School	10	22.7		
Upper Secondary School/Vocational Certificate	10	22.7		
High Vocational Certificate	1	2.3		
Bachelor's Degree	10	22.7		
Higher Than Bachelor's Degree	1	2.3		
Health Conditions				
No Chronic Disease	14	31.8		
Chronic Disease (more than 1 answer)	30	68.2		
Hypertension	19	43.2		
Dyslipidemia	12	27.3		
Diabetes mellitus	12	27.3		

SD = standard deviation

Capacity for Health Management and Promotion

The mean results showed the older adult capacity assessment pre- and post-intervention scores. For the overall capacity in health management and promotion scores, the total possible score was 50 points consisting of 15 knowledge scores, 15 attitude scores, and 20 capacity for practice scores. All three variables were measured on different scales. In this study, the findings revealed that the

overall mean score of the older adults' capacity at pre-intervention was 34.43, whereas the overall mean score of the older adults' capacity at post-intervention was 38.61 and improved significantly during the post-intervention. When comparing the mean scores between pre- and post-intervention, the overall mean score of the older adults' capacity post-intervention was higher than the pre-intervention with statistical significance ($p < 0.001$), as illustrated in Table 2.

Table 2 Comparison of mean scores on the capacity for health management and promotion (n=44)

Capacity for Health Management and Promotion	Possible Scores	Pre-intervention		Post-intervention		<i>t</i>	p-value
		Mean	SD	Mean	SD		
Knowledge about management and health promotion for older adults	15	9.77	2.27	11.77	1.79	-4.677	<.001*
Attitude toward service for older adults	5	3.76	.43	4.09	.39	-4.216	<.001*
Capacity to manage and promote health for older adults	5	3.34	.056	3.72	.057	-4.427	<.001*
Overall capacity for health management and promotion	50	34.43	4.53	38.61	4.03	-5.727	<.001*

SD = standard deviation

**p-value < 0.05*

Competence of Older Adults with High Capacity

The results presented the competence of older adults in the follow-up phase at one month. The overall mean score of the competence of older adults with high capacity at the follow-up was 3.04 with a high level ($\bar{x}$ =3.04, SD=0.45).

The majority (53.3%) of the older adults had a mean competence score in health management and promotion with a medium level ($\bar{x}$ =2.70, SD=0.25). Almost 47% of the older adults had a mean competence score with a high level ($\bar{x}$ =3.43, SD=0.25), as demonstrated in Table 3.

Table 3 - Level of competence of older adults with high capacity in the follow-up phase at one month (n=43).

Level of Competence of Older Adults with High Capacity	Number	%	Mean	SD
Medium (2.01 – 3.00 points)	23	53.3	2.70	0.25
High (3.01 – 4.00 points)	20	46.5	3.43	0.25
Overall	43	100.0	3.04	0.45

SD = standard deviation

DISCUSSION

This study aimed to develop a capacity-building program for older adults in urban communities for health management and promotion and to determine the effects of the program on the competence of older adults. This study also aimed to evaluate the competence of older adults with high capacity. The present

study found that the capacity-building program was effective and demonstrated significant improvement in the capacity for health management and promotion and the level of competence of high capacity older adults. The capacity-building program included two sections, a coursework section (48 hours) and a practical section (42 hours), totaling 90 hours for learners who were older adults in urban communities.

This program followed the Elderly Caregiver Training Program (70-hour course) developed by the Bureau of Elderly Health, Department of Health, Ministry of Public Health, Thailand²⁰ and the 2nd Thai National Plan on the Elderly (2002-2021), second revision in 2018, the strategy on readiness preparation of older adults for quality of life.⁶ This evidence reflects that the direction of care for older adults in urban communities should be at an individual level, involving personal behaviors, attitudes, physical environments, and a policy-making environment.²¹

However, the program in this study differentiates from others in the same field because this program adds up more knowledge about palliative care for older adults, the use of digital technologies for health care, and the development of a project for getting funding in Bangkok. These topics are needed for older adults dwelling in urban communities with different cultures from rural areas. Nevertheless, the program in this study is in line with previous studies.^{7, 19, 22} The program can build capacity in health care for older adults in communities. As a result, older adults can be enabled to care for themselves and others in friendly communities. The program also supports older adults in serving as volunteers in communities and promotes a better quality of life. Thus, this program may be a key contribution to the self-management and health promotion of older adults in the long run.

Noticeably, the older adults who received and completed the intervention program revealed significantly improved capacity in management and health promotion that affected their knowledge, attitude, and capacity for practice skills, possibly because the intervention program covers all the health care dimensions for older adults. When older adults are

educated and experienced on their own, they may understand the changes in older adults. The program allows older adults to exchange and share experiences due to their age, characteristics, and health conditions, allowing them to build good relationships. A possible explanation is that lifelong learning may bring older adults to share previously acquired knowledge and skills together with additional newly acquired knowledge. Fortunately, older adults may promote values related to education in old age and have more positive opportunities, such as engagement in various projects and development of a social network with the rapid development of technology and improved health literacy.²³

The present study found that almost 70% of the older adult participants had chronic diseases such as hypertension, dyslipidemia, and diabetes mellitus. As a result, these older adults might have been able to use their knowledge to manage themselves. These findings support a previous study on Mexican older adults who participated in a supervised community gerontology program for healthy and active aging through self-care and health promotion for a total of 40 hours. The program was effective and improved some clinical and biochemical parameters after the community intervention program.²⁴ This evidence demonstrates that the capacity-building program in the present study may improve older adults' knowledge of management and health promotion as well as their health status.

Interestingly, most of the older adults in this study were retired and volunteered in their communities, so they might deeply understand older adult problems and hold positive attitudes toward older adult care. Furthermore, the coronavirus (COVID-19) pandemic was ongoing at the time. The older adults might have perceived themselves as a vulnerable group and might have needed to find more

knowledge to protect against COVID-19. As a result, they might have perceived knowledge of older adult care as useful and positive. According to Phennapha's study, caregivers with an average attitude score at a high level were related to greater capacity to practice skills in older adult care.²⁶ Most older adults desire to be active, despite their ages and physical changes. Consequently, they are aware of taking good care of themselves. Older adults positively perceive that learning self-care and management may meet their needs.²⁷ Similarly, as older adults volunteer to take care of others, they require self-awareness and values.^{10-11, 28}

The level of competence of older adults in the 1-month follow-up showed that the overall mean score of the competence of older adults with high capacity was high. Older adults may integrate their knowledge into practice in real situations in their communities and enhance their competencies with high capacity. The older adults in this study were also given tips for managing the challenges of home-based caregiving to share with family members. They were briefed on how to convey a deep sense of caring and respect for others and how to promote health and disease prevention activities. The results also confirm that older adults would gain new knowledge and practical skills for personal and family development in communities,¹⁰ indicating that a positive attitude can improve individual performance as competence.²⁸ This is important because an attitude toward helping others can make older adults proud to be caregivers and devote themselves to common goals.

CONCLUSION AND RECOMMENDATIONS

This capacity-building program for older adults (90-hour program) was effective and able to improve capacity for health management and promotion in

knowledge, attitude, and capacity to practice skills. The capacity-building program also developed the competence of older adults with high capacity. This program can effectively guide community-based healthcare providers to improve their capacity in health management and health promotion in friendly communities. Further study should be considered in the form of randomized controlled trials, and the follow-up phase should be three and six months after the program.

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LIMITATIONS OF THE STUDY

This study also had some limitations, including the following: (1) conducting the program during the Covid-19 pandemic made it challenging to contact participants for preparing online classes via Zoom meetings before implementing the program. However, the researchers approached and communicated with the community leaders to inform them about the study by implementing health protocols to prevent the risk of Covid-19 transmission; (2) conducting the program only in Dusit District with nine communities prevented the ability to summarize the findings to represent older adults living in urban communities; (3) lacking a control group to reduce the impact of study's confounding factors; and (4) because the participants were from urban areas with good access to technology, it might be challenging to generalize the findings to other areas.

CONFLICTS OF INTEREST

All authors declare no conflicts of interest.

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