ORIGINAL ARTICLE

Effectiveness of the elderly self-care model for enhancing quality of life by community participation in Yasothon Province, Thailand

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ABSTRACT

The quality of life (QoL) of elderly individuals is an important public health issue in Thailand. This study aimed to assess the factors affecting QoL in elderly individuals. Additionally, action research was used to develop and evaluate the self-care model. Mixed methods research was conducted on 369 elderly individuals in Yasothon Province, Thailand, from June 2020 to May 2022. The data were collected through a self-administered questionnaire, and then were analyzed via SPSS 25.0. The stepwise multiple linear regression analyses and an independent sample t-test were used for the data analyses. The majority of the participants were female (72.63 percent), and the average age was 68.8 years. Most participants (91.9 percent) used universal health coverage, and more than half reported having a QoL at a moderate level (67.75%) or low level (26.02%). Only a few individuals reported having a high QoL (6.23%). Linear regression analysis revealed that age, sex, self-esteem, family relationships, and community participation affected the QoL of elderly individuals. The self-care model was found to be an effective intervention for the QoL of elderly people. This model enhanced the QoL of elderly people by increasing their knowledge of self-care. The model also increased the cooperation of community network groups to support and create an environment for elderly individuals.

Key words:
quality of life, self-care, elderly

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INTRODUCTION

The number of people over the age of 60 is increasing in Thailand as the population ages.[1] The elderly population in Thailand has increased from 1.25 million in 1980 (4.9% of the total population) to 16.78 million in 2022 (18.38% of the total population).[2] Elderly people experience aging-related problems in the physical, psychological, economic, and social domains of daily life.[3,4] These problems, have become a serious public health crisis in Thailand.

Elderly people face changes in their physical, mental, and mental health, which can affect their daily activities. In some cases, if they are unable to adapt to such changes, elderly people may become a burden to their families and society.[5] In addition many elderly people are more likely to develop chronic diseases as their age progresses.[6,7] The Bureau of Noncommunicable Diseases indicates that the most common chronic conditions found among elderly people are hypertension, diabetes, and osteoarthritis.[8] The severity of these diseases increases with age, and affects the mental health of elderly individuals. When they experience a reduced ability to perform daily activities due to physical limitations, these individuals can also experience anxiety, fear, and stress. Moreover, aging individuals may feel that they are a burden on family members, may experience less interaction with society, and may not be able to earn an income as they did before. If these feelings continue over time, elderly people can develop low self-worth, depression, and unhappiness. These changes in physical, mental, and social conditions have a considerable impact on the QoL of elderly people.[9]

To address the challenges of its aging society, Thailand has implemented a national long-term care policy. Under the second "National Plan on the Elderly" (2002–2021) and the 2002 WHO Policy framework for active aging, Thailand seeks to promote mental health and social connections to be as important as improving physical health status.[10] The aging population in Thailand is also becoming a challenge for healthcare workers. The Thai government has implemented a policy to improve the QoL of Thai senior citizens; however, the families of elderly individuals can provide only a limited amount of care. Community-based health care with limited assistance from the national healthcare system may provide extra support.[8] QoL is a perception that people experience through culture and situations. It is found to be related to each person's expectations and awareness. QoL consists of four interrelated domains: 1) physical health; 2) mental health; 3) social relations; and 4) environmental factors.[11] The self-care behavior of elderly individuals is an important part of their quality of life. In healthy lifestyles, people who have a good level of self-care behavior will have a good quality of life and give attention to self-care if care is needed. For example, they will try to maintain their health as soon as possible by seeing a doctor. This self-care behavior can improve the quality of life of elderly individuals.[10] One study in 2020 found that over two-thirds of the older adults living in Thailand enjoyed a fair level of QoL.[12] However, the study did not examine the extent to which family relationships, community participation, self-esteem and perceptions of health status influenced the QoL among older adults. Therefore, the current study focused on predictive factors including socio-demographics, family relationships, community participation, self-esteem and perceptions of health status that affect QoL in elderly individuals. Additionally, action research was used to develop and evaluate the self-care model.

METHODS

Study design, population sampling, and tools

This was a mixed methods study with two phases conducted from June 2020 to May 2022 in Yasothon Province, Thailand.

Phase 1 quantitative phase

In phase 1, we explored the predictive factors affecting QoL in elderly individuals. The participants of this study were elderly (aged 60 years or older) people residing in all 10 subdistricts in Mahachanachai District, Yasothon Province, where there are 9,247 seniors .[3] At a confidence level of 95%, percent of reliability, the QoL of seniors was 17.9 percent[13] and the accepted value of error was 1.96%.The sample size was calculated via formula sampling (shown below).[14] The sample size was 335 people.

$$n = \frac{\mathrm{NP}(1-P)z_{1-a/2}^2}{d^2\,(N-1) + p(1-p)z_{1-a/2}^2}$$

$$n = \frac{9{,}247\mathrm{X}0.179(1-0.179)1.96^2}{0.0472^2\,(9{,}247-1) + 0.179(1-0.179)1.96^2}$$

$$n = 335$$

where n is the sample size; N is the population; p is the proportion; $z_{1-a/2}^2$ = 1.96; and d is the error.

In addition, per the formula, the sampling group was increased by 10% to obtain the required number of participants and to account for incomplete data, resulting in a total sample size of 369 older adults. Stratified random sampling was conducted according to the size of the subdistricts in Maha Chanachai District, including 3 large subdistricts, 3 medium subdistricts, and 4 small subdistricts, followed by random sampling. Random selection was performed from the register of names of elderly people in each subdistrict. By assigning identification codes to elderly people using 3 digits, those elderly people whose IDs match the random numbers were selected for the sample group. The inclusion criteria included older adults who were at least 60 years old, lived in the chosen Mahachanachai District for more than six months, were able to speak Thai, and voluntarily participated in this study. The exclusion criteria were older adults who had recognition difficulties and other disabilities, such as dementia, psychosis, intellectual disability, blindness and deafness.

Phase 2 qualitative phase

In the second phase, we utilized action research to develop a self-care model for elderly individuals to increase their QoL through community participation by applying the concept of Kemmis & McTaggart (1988). The concept consists of four stages: planning (P), action (A), observation (O), and reflection (R).15 This qualitative research was conducted from April 2021 to May 2022 in Mahachanachai District, Yasothon Province, Thailand, with the participation of 60 people.This group consisted of 20 elderly people, 10 representatives of the Elderly Club Committee, 10 village health volunteers, 9 people involved in operations, (including 1 director of the Subdistrict Health Promoting Hospital, 1 mayor, 1 director of the Public Health Department, 6 village headmen, 1 hospital director), and 11 experts in elderly care work (including 5 hospital staff, 3 public health officials, 2 community development officers, and NFE officials). In addition, we used the six steps of the National Health Assembly process, which is a process that allows citizens and government agencies to exchange knowledge and learn in harmony to make recommendations of public policies for the health or good health of the people. This is accomplished by organizing systematic meetings with the participation of all

sectors. The health assembly consisted of participants from the political, academic, and civil society sectors. Some of these participants were responsible for elderly care at Mahachanachai Hospital, the District Public Health Office, and Tumbol Health Promoting Hospital in this district. There was also an elderly group from which the outcomes and benefits were selected by intentional sampling to obtain an in-depth understanding of the concept of brainstorming. Brainstorming is defined as "a situation where a group of people meets to generate new ideas and solutions around a specific domain of interest by removing inhibitions. People can think more freely and suggest as many spontaneous new ideas as possible. All the ideas are noted without criticism, and after the brainstorming session, the ideas are evaluated."16 We utilized an interview form to collect information about elderly health care. This form was used by health personnel responsible for working with elderly individuals in a health-promoting hospital in Mahanachai District, Yasothon Province. The in-depth interviews collected data on the situation and context of the elderly participants' previous experiences with health care. The interview also included a comparison of the QoL of the elderly before and after intervention.

Data Collection Tool

The self-administered questionnaires were composed of four parts as follows:

Part 1: Sociodemographic factors including gender, age, marital status, income, and education related to the current disease. All variables were categorized as dichotomous variables, except for the monthly income variable

Part 2: Personal factors including self-esteem, health condition, and health status perception. This is a 30-item questionnaire with a 5-point Likert scale ranging from 1 (least) to 5 (the most). The total score ranges from 10 to 50, with Cronbach's alpha of 0.89.

Part 3: Family factors including family relationships and community participation, is a 20-item questionnaire with a 5-point Likert scale ranging from 1 (least) to 5 (the most). The total score ranges from 10 to 50, with Cronbach's alpha of 0.86.

Part 4: The quality-of-life assessment questionnaire (WHOQOL-OLD) from the World Health Organization for elderly people, was translated into the Thai language by Somrongthong et al.[17,18] The questionnaire consisted of 28 questions in 4 areas: 1. Physical health, 7 items; 2. Mental health, 6 items; 3. Social relations, 3 items, and 4. Environmental factors, 8 items. There are 3 questions with positive meanings and 23 items with negative meanings. Each item is a 5-level rating scale. The QoL score ranges from 26–130 points; that is, a score of 26–60 points indicates poor quality of life, a score of 61–95 points indicates a medium quality of life, and a score of 96–130 points indicates a good quality of life.

Statistical analysis

Quantitative

The results are presented as the means, standard deviations (SDs), percentages, and frequencies. Furthermore, Pearson correlation analysis was performed to investigate the relationships between QoL for elderly individuals and other variables. A stepwise multiple linear regression model was used to exclude multicollinearity, with "QoL for elderly individuals" as the dependent variable. Next, binary logistic regression analysis was performed to test the relationships among gender, age, marital status, income, education, congenital disease, self-esteem, health condition, health status perception, family relationship, community participation, and QoL for elderly individuals. The level of statistical significance was set at a p-value <0.001.

Qualitative

A descriptive content analysis procedure was applied to examine the qualitative data. The data were recorded in a transcript, validated into categories according to similarity, and analyzed by two coresearchers. The brainstorming data were recorded and summarized by the researcher and research assistants.

Data analysis

Descriptive statistics were used to analyze the participants' characteristics and outcomes. A paired t-test was used for categorical variables, and an independent sample t test was used for normally distributed continuous variables. We compared the outcome measurements before intervention, after intervention completion, and at follow-up visits. Additionally, a multivariate linear regression model was performed to determine the intervention effect, adjusting for baseline characteristics and baseline values of the outcome measures. All statistical analyses were carried out via SPSS version 25.0, and a P value <0.001 was considered to indicate statistical significance.

Ethical approval

The research was approved by the Human Research Ethics Committee, Mahasarakham University. No. 227/2019. Certification date: December 26, 2019 – December 25, 2020.

RESULTS

The majority of the participants were female (72.63%), and the average age of all participants was 68.8 years, with most (88.08 percent) aged 60-69 years old and married (71.00%). Most of the participants had no education (85.37 percent) and more than half of the participants (75.34 percent) had a monthly income of less than 4,000 Thai Baht. Approximately one-third (35.43%) of the participants used universal health coverage. Most individuals (91.9 percent) had participated in community activities and many (69.65 percent) had a history of chronic disease. (Table 1). Most of the elderly individuals participating in the study (67.75 percent) had a moderate level of QoL (Table 2).

Table 1. Demographic characteristics of the participants

Variable	Number	Percent
Gender	369	
Males	268	72.63
Females	101	27.37
Age (years)	369	
60-79	325	88.08
⩾80	44	11.92
Marital status	369	
Single/divorced/separated	107	29.00
Married	262	71.00
Education	369	
No education	315	85.37
Primary school	54	14.63
Income per month (Baht)	369	
⩽4,000	278	75.34
⩾4,001	91	24.66
Health condition	369	

Variable	Number	Percent
Without chronic disease	112	30.35
With chronic disease	257	69.65

Table 2. Number and percentage of the level of the QoL of the rural elderly

Quality of life	Number	Percent
Quality of life	369	
Low level (20-60)	96	26.02
Moderate level (61–95)	250	67.75
High level (96–130)	23	6.23

Pearson correlation analysis indicated that age, gender, marital status, education, family relationships, community participation, self-esteem, and health status perception were significantly associated with QoL in elderly individuals ($P < 0.001$) (Table 3).

Table 3. Correlation Matrix of the Correlations Among the Variables

Variables	Y	1	2	3	4	5	6	7	8
Quality of life (Y)	1								
Age (1)	0.019**	1							
Gender (2)	0.022**	0.024**	1						
Marital Status (3)	0.027**	0.013**	0.067**	1					
Education (4)	0.036**	0.041**	0.032**	0.037**	1				
Family relationships (5)	0.041**	0.35**	0.44**	0.042**	0.031**	1			
Community Participation (6)	0.053**	0.032**	0.035**	0.069**	0.002**	0.025**	1		
self-esteem (7)	0.046**	0.047**	0.031**	0.054**	0.016**	0.045**	0.033**	1	
Health Status Perception (8)	0.037**	0.044**	0.043**	0.057**	0.027**	0.036**	0.043**	0.028	1

Notes: Variables included in the model: gender (male= 0, female= 1), Marital Status (Single/divorce/separated= 0, Marriage= 1), Education (no education = 0, primary Scholl = 1), community participation (no = 0, yes = 1), age, self-esteem, family relationships, health status perception and quality of life = continuous data. **p<0.001

The results of the stepwise multiple linear regression analysis revealed that QoL for the elderly was significantly related to age ($P = 0.017$), gender ($P = 0.031$), self-esteem ($P = 0.021$), family relationships ($P = 0.081$) and community participation ($P = 0.001$) and was used to predict the outcome variable of 32.7% (Table 4).

Table 4. Relationship Between Predictors and QoL Among Elderly, Bivariate Analysis by Linear Regression

Variables	B	SE (B)	β	t	p value
Age	1.786	0.656	0.138	8.978	0.017
Gender	1.234	0.506	0.525	6.771	0.031
Self-esteem	0.667	0.066	0.394	2.588	0.021
Family relations	2.154	1.067	0.114	5.474	0.081
Community Participation	4.353	1.356	0.127	9.827	<0.001
R^2 = 0.349, R^2_{Adj}= 0.327, F = 79.80					

Notes: Variables included in the model: marital status (single/divorce/separated = 0, marriage = 1), education (No Education = 0, Primary Scholl = 1) and health status perception (with chronic disease = 0, without chronic disease =1) continuous data

In phase 2 of our study, the elderly self-care model was implemented by organizing the community health assembly process in the Fa Yard subdistrict, Mahanachai district, Yasothon Province. We utilized a topical health assembly in long-term elderly health care that implemented the health assembly process together with the PAOR process. The steps of the PAOR process were as follows: 1) Planning: studying the context of the community, meeting stakeholders, creating an action plan, establishing the health assembly process mechanism, grouping the health assembly network, and designing the health assembly process. 2) Action: operating on the basis of a model of an elderly self-care plan. 3) Observation: monitoring and evaluation, observation, and good participation by the network in the health assembly, and the elderly participants were satisfied and had a better QoL (Table 5).

Table 5. Comparison of QoL during the elderly control process before and after intervention

Quality Of Life	n	mean	SD	mean Def.	95% CI	df	t	p value
Before operation	369	2.54	0.79					
After operation	369	6.62	1.35	0.45	0.38-0.61	12	-8.34	<0.001

4) Reflection: This approach created a lesson summary for continuous development, exchange of knowledge and lessons learned through storytelling. We communicated with society throughout the process. We prepared the documents to periodically publicize our work to people in the community. We publicized via the broadcast tower in the community every month. We participated in monthly subdistrict board committee meetings. We implemented systematic management together with the secretariat. The researchers thoroughly collected the operation data during each step and consistently met with other team members.

DISCUSSION

This study revealed that age is also related to the QoL of elderly individuals. This means that the older you are, the lower the QoL is likely to be. This may be because advancing age is related to experiences in reduced coping and problem-solving abilities, which in turn will affect the QoL of elderly individuals. When an individual is older, the functioning of the nervous

system, brain, and physical ability decreases, affecting the quality of life. These results are similar to those of previous studies,[20,21] which reported that older adults had a lower QoL, and higher levels of dependency, compared to younger adults. In addition, as they begin to increasingly depend on others, they may feel that they have become a burden to their families and society as well.[22] In addition, the results revealed that gender is another predictor of QoL in older adults. Males statistically have a better quality of life than females do, likely due to social norms in Thai society. Males are designated as the head of the family and females are seen as housewives. Therefore, males view themselves as having a more important role than females.[23]

This study also found that older adults with a higher level of education had more advantages. They may have better living conditions, a lower chance of being exposed to risk factors for disease, less labor-intensive work, a good network of friends, and a greater sense of self-efficacy. The knowledge of elderly people can be increased by organizing various activities. Learning for the elderly means learning new things easily, particularly knowledge and skills that can be applied or done right away. It is not about learning principles but about being able to apply them. Learning activities can help develop the intellectual skills of elderly individuals, which allows the elderly to develop their potential to keep up with the world in today's society.[25] Although advancing the formal education level may not be a goal for older adults, less formal and enjoyable learning experiences may be helpful, such as creative, short-term workshops or training programs.

We also found that the relationship with family is another key predictor of QoL in older adults. When elderly people have good relationships with their families, they will have a good QoL. Familial relationships foster emotional and psychological health by encouraging elderly individuals to feel supported and be part of their families. Families that have good relationships with each other support elderly individuals in maintaining their roles in the family appropriately and with good quality.[26,27]

The last predictor of QoL in this study is participation in community activities, which may help older adults increase their self-worth because they will be accepted by people in the community, leading to increased life satisfaction and quality of life.[24] This finding is consistent with a previous study that revealed that elderly people with chronic illness, who can take care of themselves, can be motivated to have good self-care practices. Moreover, they will remain in good health and do not need to rely on others.[28]

In addition, the results revealed the self-care patterns of elderly individuals. This self-care pattern operates through organizing a community health assembly process. The developed process has 11 steps: 1. Study the context area 2. Meeting stakeholders by organizing a health assembly meeting, 3) Developing an action plan, 4) Setting up a mechanism for organizing the assembly process, 5) Organizing a health assembly network group, 6) Designing a health assembly process in 4 areas: 1) examining health problems of the elderly and the number of elderly people, (2) creating income-generating jobs for elderly individuals, (3)investigating garbage and sewage problems, and (4) creating an appropriate environment, 7. Monitoring and evaluating, 8. Summarizing the lessons learned for continuous development, 9. Exchanging knowledge and extracting lessons in the form of stories, 10. Social communication throughout the process, and 11. Systematic management of these interventions focused on promoting QoL in elderly individuals. (Table 5). These results are consistent with the findings of Suriyanrattakorn, S. and Chuakhamfoo, N. We found that participation from all sectors resulted in the

obtained policy suggested from the needs of people in the community. The resulting model was also consistent with the long-term care policy for the elderly by the Ministry of Public Health. A good relationship between the organization and the interest of the director of the local administration organization in the health aspect (public sector) makes the operation and policy announcement smoother and consistent.[29,30]

Limitations of the Study: This study has some limitations. First, because of the cross-sectional design, inferring temporal and causal relationships is not possible. Despite these limitations, our study has the ability to compensate for the large sample size and control for a wide range of covariates.

RECOMMENDATIONS

This study revealed that five factors, such as age, gender, self-esteem, and family relationship community participation, were related to the QoL of elderly individuals. It operates by organizing a community health assembly through an 11-step process. The self-care model was found to be an effective intervention for the QoL of elderly people. This model enhances the QoL of elderly people by increasing their knowledge of self-care. Community leaders should encourage more elderly people to participate in community activities, thus a club for the elderly in the community has been established. The self-care model has also increased the cooperation of community network groups to support and create an environment for elderly individuals.

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

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