



A study to understand the current situation and develop the newly adjusted active aging model with empirical evidence among the Thai elderly

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ABSTRACT

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This study aims to examine the relationship among key factors including health care, mental health, attitude, social support, quality of life, life satisfaction and active aging to investigate factors that relate to active aging in the Thai elderly and to develop a new model of Thai active aging. Data for the quantitative research were collected using questionnaires and analyzed using descriptive statistics, explanatory factor analysis, and multiple regression analysis. The qualitative research sample consisted of thirty elders. The data were analyzed using content analysis. The results of this study indicate that all important factors related to the active aging of Thai elderly are at a high level such as previous active aging, quality of life, life satisfaction and adjusted active aging. From exploratory factor analysis, it was found that nine elements could be separated that reflect the adjusted active aging of Thai elderly people. In addition, the result indicated four variables that affect the adjusted active aging of the Thai elderly, health care, mental health, attitude and social support. This study creates a new model to serve as a guideline for the government or private sector to use in managing the Thai elderly.

Contribution/Originality: The factors influencing active aging in older Thai people have not been well studied. Therefore, this research is crucial to plan for elderly care in the public and private sectors. A novel active aging model appropriate for Thai elder management was created by this research.

1. INTRODUCTION

The number of seniors is expected to double between now and 2050 as the current generation of people impacts the worldwide age (United Nations, 2023). One reason for this change in population structure is due to changes in technology and medicine that have resulted in humans living longer than in the past including the declining birth rate. The proportion of children in childhood is at a lower level than in the past. Therefore, the number of elderly people in the world population structure has a higher proportion. It has been found that countries in the world are developing aging societies such as Spain, Japan, Singapore, South Korea, etc. (Amphanthong, Petcharawong, Kongpuang, & Khamnuantong, 2023; Briegas, Iglesias, Ballester, & Castro, 2020; Chittinandana, Kulnartsiri, Pinthong, & Sawaengsuksant, 2017; United Nations, 2023). Thailand has the same pattern with national statistics showing that Thailand has been an elderly country since 2000 due to the proportion of the elderly population

reaching 10 percent of the total population (Muangsakul, 2015). Every country is interested in studying various factors related to aging and problems that continue to arise from aging in the elderly especially government agencies dealing with health care and medicine for the elderly. Successfully managing problems caused by aging will greatly reduce morbidity, mortality and medical costs (Fries, 2012).

In general, the term “elderly” refers to people aged 60 years and above. This definition is often used in studies on the elderly in Thailand and other countries (Amphanthong et al., 2023; Badri et al., 2022; Chayomchai, Petmee, Sriplang, Sonthon, & Khowjoy, 2023; Muangsakul, 2015). Current statistical data from the Department of Provincial Administration, Ministry of Interior found that Thailand has a total number of elderly people equal to 12,519,926 people as of December 31, 2022 representing 18.94 percent of the total population in the country of 66,090,475 people (Department of Provincial Administration, 2023). Therefore, it can be considered that Thailand has entered an aging society. In addition, when considering the area of Phetchabun Province, statistical data from the Department of Elderly Affairs indicates that there are 197,590 elderly people aged 60 years and over living in Phetchabun Province as of December 31, 2022. It was found that the number of elderly people in Phetchabun Province is 20.3 percent when compared to the province's total population of 973,386 people (Department of Elderly Affairs, 2023). Therefore, Phetchabun Province is also considered an elderly province.

From the above information, research on the elderly is necessary to use the research results in planning services to manage the aging society at present and in the future. The term “active aging” refers to elderly people who have the energy to live their lives appropriately (Chayomchai et al., 2023). According to the World Health Organization's guidelines for developing policies for the promotion of the elderly, the concept of active aging has three important elements: being in good health; having good life insurance and the participation of the elderly (Phongboriboon, 2020). It is necessary to create an understanding of the image of the elderly who is not a person who is incompetent and dependent on others but must adjust their attitude towards the aging society of Thailand to promote their active aging, increasing their value and dignity and promoting the elderly to live proudly and happily in Thai society in this situation of Thailand entering into a completely aging society (Singhatthanakit & Wasarongrong, 2020). Therefore, studies on aging are important and necessary in explaining aging and finding solutions to various problems in the elderly with the goal of increasing well-being and improving the quality of life in the elderly (Briegas et al., 2020). Past studies have used many words that correspond in the same direction or have the same meaning as power such as happiness, health, good living conditions, life satisfaction, quality of life etc. (Briegas et al., 2020; Phongboriboon, 2020; Sukmaitri, Saengchan, Chakraphatthawong, & Rodjam, 2022).

There must be future planning to accommodate important changes and prevent upcoming problems with this issue of aging cities in Thailand. According to the researcher, it is necessary to study the active aging of Thai elderly people and what factors affect the active aging mentioned above. Therefore, the researcher is interested in exploring the active aging of Thai elderly people by using Phetchabun province as a representative of an elderly city because the number of elderly people in this province has already exceeded the criteria for being an elderly city. The study aims to investigate the level of active aging in the elderly and to find out the important factors affecting the active aging of the elderly to develop the newly adjusted active aging model of the elderly which will be beneficial to the planning and management of the elderly in Phetchabun Province and as a guideline for the management of elderly groups in other areas as well.

2. RESEARCH OBJECTIVES

As a result of the study of literature and research related to the active aging of the elderly and all related important factors, the researcher has set the objectives of this study as follows:

1. To study the level of the main variables related to the elderly's active aging in the study including healthcare, mental health, attitude, social support, quality of life, life satisfaction, previous active aging and adjusted active aging.

2. To analyze and classify factors related to the active aging of Thai elderly in Phetchabun Province.
3. To study important factors, including health care, mental health, attitude and social support that affect the adjusted active aging of the Thai elderly.
4. To create a model for the newly adjusted active aging of the Thai elderly.

3. LITERATURE REVIEW

3.1. Active Ageing Concept and Practice

According to the concept of active aging of the World Health Organization, the term “active aging” refers to elderly people who have the energy to live their lives appropriately in all 3 aspects, namely being healthy, having good life insurance and participation of the elderly (Chayomchai et al., 2023). Engaging in activities that prioritize the preservation, respect and well-being of individuals is necessary for active aging. It provides an understanding of the possibilities of aging that is more holistic in nature taking into account aspects like mental and physical health as well as social participation. The activity ought to include all worthwhile endeavors that enhance personal wellbeing, like volunteering (Foster & Walker, 2021). A study by Sukmaitri et al. (2022) indicated that active aging is a guideline or process for the elderly to develop and change themselves to have power in various areas such as having the ability to assess physical and mental health to be able to live well in daily life, to join social groups, to have sufficient income, to have safe living conditions and to have conditions that are conducive to living life related to various technologies. A study by Insin et al. (2021) indicated that studied the active aging of the elderly in Thailand found that the elderly had a high level of overall active aging. However, the study concluded that some groups of elderly people still need to be empowered to lead a participatory lifestyle so that they can be self-reliant and create value for society. Similarly, the study by Wongkinee, Jintanawat, and Sukhamwang (2013) concluded that the active aging of the Thai elderly is at a high level. However, Ratana-Ubol (2020) advised that lifetime learning might offer resources or life-course strategies to encourage active aging in the elderly. Interventions for life longevity or active aging are some useful tactics for overcoming the obstacles of medical, mental and social factors during the aging process (Chi, Wu, & Liu, 2021). In addition, both intrinsic genetic variables such as predispositions to particular health disorders and extrinsic or environmental factors have a significant impact on the aging process (Foster & Walker, 2021). Past studies have found that many factors affect the active aging of adults such as physical health, mental health, attitude, socialization, social support and family understanding (Briegas et al., 2020; Chayomchai et al., 2023; Ratana-Ubol, 2020; Rojpaisarnkit, 2016; Sukmaitri et al., 2022; Zhao & Wu, 2018).

3.2. Quality of Life

The concept of quality of life is closely tied to health and its various aspects (Şahin, Özer, & Yanardağ, 2019). Past studies have used the term quality of life to assess people's characteristics of health, happiness or life satisfaction (Pequeno, Cabral, Marchioni, Lima, & Lyra, 2020). There is a relationship between subjective well-being, happiness, life satisfaction and quality of life (Ruzevicius, 2014). This suggests that quality of life variables may also be used to reflect active aging in the elderly. For seniors, the idea of "successful aging" has become crucial to their ability to have happy and healthy lives (Ratana-Ubol, 2020). Research indicates that the health factor plays a crucial role in determining the quality of life of older adults as they typically prioritize their health (Díaz-López, Lopez-Liria, Aguilar-Parra, & Padilla-Góngora, 2016). Therefore, the elderly's quality of life was shown to be influenced by their physical health. Their views of their health were important predictors of their active aging in old age, and poor health was linked to higher rates of the elderly's anxiety and depression (Rojpaisarnkit, 2016). In addition, lifetime learning could provide tools or life course approaches to improve their quality of life or well-being and promote active aging (Ratana-Ubol, 2020). A person's level of independence, social interactions with the environment, physical and mental health and other elements all affect their quality of life (Ruzevicius, 2014).

Therefore, this study uses questions about quality of life as part of the assessment of active aging in the elderly in order to cover important elements that will better reflect active aging.

3.3. Life Satisfaction

Past studies have shown a relationship between life satisfaction and quality of life (Ruzevicius, 2014). Some studies have also reflected the relationship between life satisfaction and happiness (Lopez-Ruiz, Huete-Alcocer, Alfaro-Navarro, & Nevado-Pena, 2021; Ruzevicius, 2014). Life satisfaction, a personal evaluation of one's overall quality of life is sometimes used interchangeably with happiness to describe how individuals feel and perceive their lives (Lopez-Ruiz et al., 2021). Therefore, the researcher used the questions regarding life satisfaction to evaluate the active aging of the elderly to cover more dimensions. Life satisfaction among the aging population is predicted to be significantly impacted by the key life events that occur during the aging process (Ratana-Ubol, 2020). In addition, life satisfaction was thought to be positively correlated with keeping the elderly from losing their ability to function which was linked to their overall well-being and active aging (Rojpaisarnkit, 2016). According to some research, a senior's health has an impact on their level of happiness and life satisfaction (Ratana-Ubol, 2020). The study by Zhao and Wu (2018) pointed out that an older people's life satisfaction is mostly influenced by three factors: their personal traits, their family and their social support network. Jung, Muntaner, and Choi (2010) found that the two most significant variables influencing older people's life satisfaction were their financial situation and health. According to Ratana-Ubol's (2020) research, an older person's degree of social activity involvement and his level of life satisfaction are positively correlated.

3.4. Key Factors Influencing Active Ageing

3.4.1. Healthcare

The physical state of the elderly was shown to have an impact on their well-being confirming that views of one's health were important predictors of active aging in old age and that poor health was linked to higher rates of anxiety and depression in the elderly (Rojpaisarnkit, 2016). A study by Zhao and Wu (2018) found that better physical health results in greater happiness and optimism. This is consistent with the study of Ratana-Ubol (2020) which found that personal health factors are important factors affecting happiness in the elderly which is part of their active aging. It is consistent with the study of Sukmaitri et al. (2022) who concluded that taking care of one's own physical health clearly affected the active aging of the elderly. The study of Rojpaisarnkit (2016) who studied health, social participation and relationships with family that affect the quality of life of Thai elderly people. The results of the study found that social participation and relationships with family had a significant influence on the active aging of the elderly but it was found that health had no effect on the active aging of the elderly group studied. Therefore, this study hypothesizes that

H₁: Health care has a positive influence on the active aging of the elderly.

3.4.2. Mental Health

Mental health problems like despair, anxiety, loneliness and a lack of family support are more common in the elderly. Older people are especially prone to loneliness and social isolation (Reynolds 3rd, Jeste, Sachdev, & Blazer, 2022). "A state of well-being in which the individual realizes his or her own abilities can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to his or her community" is how the World Health Organization describes positive mental health (Ruggeri, Garcia-Garzon, Maguire, Matz, & Huppert, 2020). Sustaining mental well-being is essential for older adults to effectively manage depression (Chi et al., 2021). According to Lima and Ivbijaro's (2013) research, better quality of life, happiness and vigor are the results of managing mental health care effectively. Sukmaitri et al. (2022) who discovered that elderly people mental

health in Thailand positively influenced their active aging process corroborate this finding. Based on this, the researcher made the following hypothesis:

H₁: Mental health has a positive influence on the active aging of the elderly.

3.4.3. Attitude

The direct experiences or observations of an individual shape their attitudes (Kisvetrová, Mandysová, Tomanová, & Steven, 2022). It is vital to comprehend the perspectives of the elderly concerning aging. Understanding the attitudes of the elderly towards living life at this age will help in planning the management of the elderly in society. It has been discovered that an elderly people's attitude towards life influences their quality of life and active aging. However, some past studies have found that negative attitudes towards aging are common in today's society (Bratt & Fagerström, 2023). According to certain research, negative aging attitudes are associated with lower life satisfaction and more detrimental impacts (Rojpaisarnkit, 2016). A person's attitudes may be crucial to their psychological health and active aging. In terms of attitudes towards the lifestyle of the elderly, the study by Briegas et al. (2020) indicated that attitudes towards living a life that is related to active aging especially the promotion of thinking influenced the quality of life of the elderly. According to the study of Wongkinee et al. (2013), it is concluded that the elderly's attitudes significantly influenced the active aging of Thai elderly. In addition, the study by Bratt and Fagerström (2023) pointed out that the positive attitude of the elderly had a significant influence on active aging, especially the life satisfaction aspect. Therefore, this study hypothesizes that

H₂: Attitude has a positive influence on the active aging of the elderly.

3.4.4. Social Support

Social support includes both personal and external resources including people, groups, communities and associated organisations. It also consists of the capacity to provide aid and resources. According to Qureshi, Tariq, and Mubeen (2023), it encompasses a range of assistance provided by one's social network including financial aid, counsel, daily task assistance and demonstrations of compassion, understanding and caring for those in need. Rojpaisarnkit (2016) found that social participation and family relationships significantly impact the quality of life of the elderly. Senior citizens with positive interpersonal interactions tend to score higher on well-being scales. This aligns with Sukmaitri et al. (2022) who indicated that safe living conditions and social group participation promote active aging in the elderly. Díaz-López et al. (2016) came to the same conclusion that seniors' quality of life is improved by self-development and lifetime learning in social groups. Zhao and Wu (2018) discovered that social networking together with hobbies and getting together with friends and family contributes to a more active senior life. Additionally, social support has a good impact on active aging in senior Wongkinee et al. (2013). Şahin et al. (2019) concluded that Thai people strengthening the social support system for senior citizens enhances their active aging particularly in terms of life satisfaction. Consequently, this study hypothesizes that

H₃: Social support has a positive influence on the active aging of the elderly.

3.5. Research Framework

From the review of literature and research related to active aging in the elderly as shown at the beginning of this article, the researcher has defined the conceptual framework of this study as shown in Figure 1.

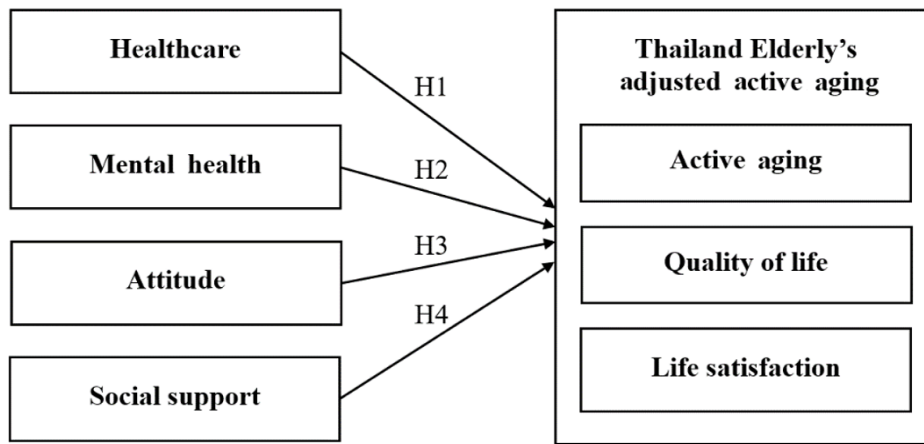


Figure 1. Research framework.

4. RESEARCH METHODOLOGY

This study is a mixed-methods research project that involved first conducting quantitative research and then conducting qualitative research to conclude a new model of the active aging of elderly people in the target area.

4.1. Quantitative Research

4.1.1. Population and Sample

The population is the elderly aged 60 years and over who live in Phetchabun Province which numbered 197,590 people as of December 31, 2022 (Department of Elderly Affairs, 2023). The sample of the research is the elderly of the Province of Phetchabun which has a sample size of 384 people by calculation from Krejcie and Morgan's formula. The researcher calculated the sample size using a confidence level of 95 percent, a population variance of 0.5 and an error level of 5 percent (Krejcie & Morgan, 1970).

4.1.2. Measurement Scale

The questionnaire developed from a review of relevant literature for use in quantitative research consisted of two main parts: Part 1 consisted of questions about the demographic information of the respondents and part 2 consisted of questions about key variables with details and reliability tests for each section as shown in Table 1. When considering the results from the Cronbach's alpha values, it was found that every variable had a value exceeding 0.7 which is considered to have a high level of confidence (Brace, Kemp, & Snelgar, 2012). The researcher sent the questionnaire to three experts to check the content validity and analyze the item-objective congruence (IOC) and the results of the validity check found that every question had an IOC value equal to 1 which was considered to have passed the content validity analysis before analyzing the reliability of the questionnaire (Hair, Black, Babin, & Anderson, 2014).

Table 1. Details and reliability values of the key variables in the questionnaire.

Variables	Items	Sources	Reliability
Active aging	12	Chi et al. (2021)	0.92
Quality of life	5	Ruggeri et al. (2020)	0.91
Lif satisfaction	5	Diener, Emmons, Larsen, and Griffin (1985) and Ratana-Ubol (2020)	0.79
Healthcare	8	Chi et al. (2021)	0.92
Mental health	6	Sharma and Devkota (2019)	0.73
Attitude	4	Rojpaisarnkit (2016)	0.92
Social support	7	Boonpha, Kraithaworn, and Piasue (2019) and Martins et al. (2022)	0.92

4.1.3. Data Collection

Quantitative research uses questionnaires to collect data from target areas in Phetchabun Province by the quota sampling method from all 11 districts of Phetchabun Province. The research team collects 35 sets of data per district randomly targeting the elderly who were willing to provide data for the research until the required number of sets of this study was reached which is 384 sets.

4.1.4. Statistical Analysis

Quantitative research employs statistical analysis starting with descriptive statistics such as frequencies, percentages, means, standard deviations, skewness and kurtosis. The researcher interpreted the average results of the seven key variables as follows: an average of 4.21-5.00 indicated the highest level, 3.41-4.20 indicated a high level, 2.61-3.40 indicated a moderate level, 1.81-2.60 indicated a low level and 1.00-1.80 indicated the least level of opinion. The researcher conducted an explanatory factor analysis using principal component analysis with varimax rotation to identify important new factors of adjusted active aging. Subsequently, the researcher examined the correlations to verify the initial conditions prior to conducting regression analysis. Finally, the influences of the independent variables on the dependent variables were examined using multiple regression analysis.

4.2. Qualitative Research

4.2.1. Targeted Informants

The population is the elderly in Phetchabun province. The samples or informants in the interviews were elderly people with inclusion and exclusion criteria: those aged 60 years and over without serious illnesses, able to live a normal life and able to provide information in the interview themselves. The number of informants was determined to be 20-30 according to the reference criteria of Nastasi and Schensul (Nastasi and Schensul, 2005 cited in [Sutheewasinnon and Pasunon \(2016\)](#)).

4.2.2. Data Collection

An interview form was developed from a literature review to guide interviews in qualitative research. It was a semi-structured question related to the variables in the research framework and an open-ended question about factors influencing active aging in the elderly. Qualitative research used interviews with target elderly people according to specified inclusion and exclusion criteria: those who are 60 years of age or older, healthy, able to lead normal lives, and capable of answering questions during the interview. The researcher aimed to interview thirty or at least twenty elderly people according to the specified criteria.

4.2.3. Content Analysis

Qualitative research uses content analysis which individualizes content to reveal key issues that influence the active aging of older adults. The researcher performed a data triangulation check before content analysis. The results of the analysis will be summarized together with the quantitative research results to develop the new adjusted active aging model of this study. The research project, questionnaires and interview form have been considered and approved by human research ethics from the Human Research Ethics Committee of Nakhon Ratchasima Rajabhat University which received certification number HE-089-2566.

5. RESULTS

5.1. Descriptive Analysis of Participants

The results of the general data analysis of the respondents in this research are shown in [Table 2](#). It was found that the majority of respondents were female aged between 66 and 70 years old had a high school education level, had marital status and had a monthly income between 451 and 900 USD.

Table 2. General data analysis of the respondents.

Variables		Frequencies	Percent
Gender	Male	94	24.4
	Female	279	72.7
	LGBTQ+	11	2.9
Age	60 – 65 years	69	18.0
	66 – 70 years	205	53.4
	71 – 75 years	85	22.1
	76 years or above	25	6.5
Education	Primary school	45	11.7
	High school	173	45.1
	Higher certificate or diploma	53	13.8
	Bachelor degree	103	26.8
	Master degree	10	2.6
Status	Single	14	3.6
	Married	178	46.4
	Separated	148	38.5
	Divorce	44	11.5
Income per month	Below 150 USD	13	3.4
	150 – 450 USD	106	27.6
	451 – 900 USD	247	64.3
	901 USD or above	18	4.7

Note: The LGBTQ+ word refers to a group of people with diverse sexuality such as lesbian, gay, bisexual, transgender, queer and others.

5.2. Statistical Analysis of Key Variables

The results of the analysis of key research variables including healthcare, mental health, attitude, social support, previous active aging, quality of life, life satisfaction and adjusted active aging are shown in [Table 3](#). It was found that every variable had a high level of mean value. Every variable has an average between 3.96 and 4.04. When considering the standard deviation, skewness and kurtosis values, it was found that the values were at a normal level which did not cause data problems that would be used for statistical analysis in the next step.

Table 3. Statistical analysis of the key research variables.

Variables	Means	Standard deviation	Skewness	Kurtosis
Healthcare	4.03	0.25	0.17	0.44
Mental health	4.03	0.28	0.20	0.53
Attitude	4.00	0.33	0.16	0.30
Social support	4.00	0.27	-0.03	0.49
Previous active aging	4.04	0.21	0.30	0.20
Quality of life	3.98	0.30	0.24	0.10
Life satisfaction	3.96	0.28	0.39	-0.03
Adjusted active aging	3.99	0.18	0.21	-0.20

5.3. Exploratory Factor Analysis of Adjusted Active Aging

Active aging, quality of life and life satisfaction are the three variables that were found in the literature review to be indicators of the status of active aging in the elderly. The researcher categorized important new factors or components of active aging by looking at responses to questions based on these variables. The twenty-two items included for the explanatory factor analysis included twelve on active aging, five on quality of life and five on life satisfaction. [Table 4](#) displays the findings from the preliminary study of data validity. According to [Brace et al. \(2012\)](#), the KMO value of 0.520 is deemed satisfactory as it represents the percentage of data variance that can be accounted for by the components. When considering the Bartlett's test that shows the ability to separate the factors, it was found to be equal to 730.651 and clearly statistically significant indicating that the questions used were able to separate the factors appropriately ([Brace et al., 2012](#)).

Table 4. Results of KMO and Bartlett's test.

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy.		0.520
Bartlett's test of sphericity	Approx. chi-square	730.651
	Df	231
	Sig.	0.000***

Note: *** = The significant level is at the 0.001 level.

Tables 5 and 6 show the results of the factor analysis of adjusted active aging in the elderly. The researcher used criteria to separate factors from Eigen values greater than 1. The analysis found nine new factors that reflected the active aging of the elderly in the study group and those nine factors explained a total variance of 58.89% in the data.

Table 5. Total variance explanation.

Component	Initial eigenvalues			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	1.953	8.878	8.878	1.695	7.706	7.706
2	1.689	7.675	16.554	1.481	6.730	14.436
3	1.666	7.572	24.126	1.474	6.702	21.138
4	1.440	6.544	30.669	1.467	6.670	27.809
5	1.428	6.489	37.158	1.448	6.580	34.389
6	1.339	6.087	43.245	1.416	6.438	40.827
7	1.290	5.863	49.109	1.361	6.187	47.014
8	1.121	5.095	54.203	1.352	6.144	53.158
9	1.033	4.695	58.899	1.263	5.741	58.899

Table 6. Rotated component matrix

Variables	Component								
	1	2	3	4	5	6	7	8	9
Life quality (Q2)	0.685								
Life quality (Q4)	-0.600								
Life quality (Q5)	0.597								
Active aging (A8)		0.738							
Active aging (A10)		-0.689							
Satisfaction (S4)			0.800						
Life quality (Q1)			-0.619						
Satisfaction (S2)			-0.535						
Active aging (A9)				0.700					
Active aging (A7)				-0.660					
Satisfaction (S3)					-0.767				
Satisfaction (S1)					0.714				
Satisfaction (S5)					0.533				
Active aging (A3)						0.746			
Active aging (A5)						-0.587			
Active aging (A4)							0.678		
Life quality (Q3)							0.535		
Active aging (A1)							0.534		
Active aging (A2)								0.746	
Active aging (A6)								0.525	
Active aging (A11)									0.812
Active aging (A12)									-0.591

From the results of factor analysis, Table 6 shows details of nine new components of active aging in the elderly. The first component consists of three questions (Q2, Q4, Q5). The name of this component is 'Living a happy and valuable life'. The second component consisted of two questions (A8, A10) titled 'Care and Prevention of Injury and Illness'. The third component is called 'Positive attitude and sufficiency', which has three questions (S2, S4, Q1). The fourth component, named 'Knowledge about aging disease', consists of two questions (A7, A9). The fifth component is called 'Living with Purpose' and it has three questions (S1, S3, S5). The sixth element is called

'Recreational Activities', which consists of two items (A3, A5). The seventh element consisted of three items (A1, A4, Q3) named 'family care', and the eighth element consisted of two items (A2, A6) named 'health knowledge'. Finally, the ninth component consisted of two questions (A11, A12) named 'Self-esteem'.

5.4. Key Factors Influencing Active Ageing

The researcher created a new variable, the adjusted active aging variable from the results of an exploratory factor analysis by considering combining the questions of three variables, namely previous active aging, quality of life and life satisfaction. The researcher tested the correlation of the research variables with the correlation coefficients shown in Table 7 before testing the influence using multiple regression analysis. The results found that the variable pairs had a statistically significant correlation and the value was not too high. The analysis results show that all coefficients are less than 0.7 which is considered suitable to meet the preconditions of the multiple regression analysis (Hair et al., 2014).

Table 7. Correlation among the key variables.

Correlation	Healthcare	Mind health	Attitude	Social support	Adjusted active aging
Healthcare	1				
Mind health	0.274**	1			
Attitude	0.397**	0.226**	1		
Social support	0.283**	0.353**	0.234**	1	
Adjusted active aging	0.469**	0.406**	0.421**	0.429**	1

Note: ** = The significant level is at the 0.01 level.

The researcher tested the influence of four important independent variables that affect the new adjusted active aging variable in the elderly.

The results of the analysis are shown in Table 8. It was found that four important variables had a significant effect on the adjusted active aging variable of the elderly, namely health care, mental health, attitude and social support. The analysis indicated that health care had the highest influence followed by social support, mental health and attitude respectively.

Table 8. Regression analysis of key factors influencing the adjusted active aging variable.

Variables	Unstandardized coefficient		Standardized coefficient	t	Sig.	VIF
	B	Std. error	Beta			
Constant	1.573	0.157	-	10.815	0.000***	-
Healthcare	0.194	0.033	0.263	5.815	0.000***	1.273
Social support	0.151	0.030	0.221	5.029	0.000***	1.206
Attitude	0.122	0.025	0.218	4.918	0.000***	1.222
Mind health	0.137	0.029	0.206	4.697	0.000***	1.198
R = 0.626, R square = 0.391, Adjusted R square = 0.385, F = 60.924, sig. of F = 0.000***						

Note: *** = The significant level is at the 0.001 level.

The results of this multiple regression analysis show a coefficient of determination (R square) equal to 0.391. It reflects that the four independent variables can explain the variance of the dependent variable which is an adjusted active aging equal to 39.1 percent.

5.5. Qualitative Results

The results of the content analysis of the qualitative research were obtained from thirty elderly people who agreed to participate in the interview and met the inclusion criteria. Twelve of the elderly interviewed were male, and eighteen were female. They are between sixty and eighty years old. The content analysis results from the interviews are shown in Table 9.

Table 9. Results of the content analysis from the targeted active aging.

No.	Gender	Age (year)	Factors affecting the active ageing						
			Physical health	Mental health	Attitude	Family care	Govern. support	Social support	Volunteer/ Merit
A1	Female	68	Physical care	Happy, relax and calm	Positive thinking	Family support	Financial support	Friend meeting and group activity	Merit making and volunteer activities
A2	Female	61	Physical care, beauty care, food and exercise	Happy, smile and calm	Positive thinking	Family understanding and support	Financial support and training program for elderly occupation	Community activity	Volunteer activities
A3	Female	71	Physical care, exercise	Fun and happy	Positive mindset	Family support	Financial support	Friend meeting, community activities like elderly visiting	Volunteer activities
A4	Male	69	Physical care, dance exercise	Happy and calm	Positive thinking, social meeting	Family support	Elderly supporting program	Exercise activity and elderly support activity	Volunteer activities and merit making
A5	Female	69	Physical care, dance exercise	Happy, smile and calm	Positive thinking, social meeting	Family support	Elderly promotion policy	Friend meeting	Volunteer activities
A6	Female	60	Physical care	Mental practices and happy	Happiness	Family understanding and support	Elderly health and mind promotion program	Community activity	Volunteer activities and merit making
A7	Female	80	Physical care, group exercise	Happy and calm	Positive thinking, social meeting	Family care and support	Financial support, elderly supporting project	Leisure activity, elderly support	Volunteer activities
A8	Male	62	Physical strength	Mind care	Positive thinking	Family support	Elderly supporting project	Elderly activity support	Volunteer activities
A9	Male	78	Physical care	Mind control	Positive thinking	Family care and support	Guidelines and policy to support the elderly program	Elderly activity support	Not mentioned
A10	Female	60	Physical strength, exercise and detox	Mental practices and happy	Positive thinking and social meeting	Family support	Activity public relation	Community activity	Volunteer activities and merit making
A11	Male	74	Exercise, food	Mind care	Not mentioned	Family care and support	Exercise support	Exercise support, activities	
A12	Male	69	Physical care	Mind control	Happy attitude	Not mentioned	Exercise support	Not mentioned	Merit making
A13	Female	70	Exercise, good food and sleep well	Relax and no stress	Positive thinking	Family support	Exercise support, health checking program	Health promotion program	Not mentioned
A14	Male	60	Exercise and strong body	Not mentioned	Positive mindset	Family support	Not mentioned	Friend meeting and activities	Not mentioned
A15	Female	66	Exercise	Happiness	Happy attitude	Family support, friend	Elderly school	Exercise support and	Not mentioned

						meeting		activities	
A16	Male	72	Exercise and strong body	Mind care	Happy attitude	Family support	Elderly school	Exercise support and activities	Not mentioned
A17	Male	65	Exercise and strong body	Not mentioned	Positive mindset	Family support	Exercise support	Exercise activities	Not mentioned
A18	Female	70	Physical care	Mind care	Positive mindset	Family support	Exercise support and financial support	Activities support feeling and thinking	Not mentioned
A19	Male	73	Physical care	Mind care	Positive mindset	Family care and support	Financial support	Health support	Not mentioned
A20	Male	64	Food and sleep	Mind care	Positive mindset	Family support	Exercise support	Exercise activities	Not mentioned
A21	Female	67	Exercise and food	Relax and no stress	Happy attitude	Family support		Food securities	Merit making
A22	Female	67	Exercise and food	Relax	Positive mindset	Family support	Exercise support	Exercise activities	
A23	Female	73	Sleep, food and strong body	Happiness	Happy attitude	Not mentioned	Financial and food support	Not mentioned	Merit making
A24	Male	73	Strong body	Happy and no overthinking	Positive mindset	Family care, friend meeting	Knowledge support	Community meeting	Not mentioned
A25	Female	67	Exercise	Not mentioned	Positive thinking	Family care	Not mentioned	Financial support	Not mentioned
A26	Male	60	Exercise	Mind care	Positive thinking	Family understanding and support	Financial support	Community activity	Not mentioned
A27	Female	64	Exercise and sleep well.	Happy and no stress	Positive mindset	Family support	Exercise support and health checking program	Friend meeting and group activity	Not mentioned
A28	Female	64	Exercise and sleep well.	Relax and no stress	Positive thinking	Family understanding and care	Exercise support, health education	Elderly knowledge and information	Volunteer activities and merit making
A29	Female	67	Exercise and food	Relax and meditation	Positive thinking	Not mentioned	Elderly welfare	Community activity	Merit making
A30	Female	71	Exercise, food and sleep well.	Mind care	Positive mindset	Family support	Community activity support	Leisure activity and elderly support	Not mentioned

From the results of the analysis in [Table 9](#), seven important factors affecting the active aging of Thai elderly in Phetchabun Province were found including physical health, mental health, attitude, family care, government support, social support and volunteer or merit making. Regarding physical health, the elderly who gave the information emphasized taking care of their health through exercise, paying attention to their diet and sleeping well. This health care may include dance exercises and beauty care for elderly women. As for mental health, the informants viewed that the important things that help with mental health are happiness, relaxation, no stress, no overthinking, calmness, fun, smiling, mind control and training the mind. In addition, the informants indicated that positive thinking and a happy attitude are important factors in attitudes that affect active aging in the elderly. Family care is another important factor affecting the active aging of the elderly with family understanding and support playing a very important role. Two other important aspects of support are support from the government and society. They are considered an important factor affecting the active aging of the elderly. The respondents viewed that the government and social sectors should support financial activities, health activities, activities in the community, friend activities, training programs to create careers and programs to promote and check the health of the elderly. The final issue that the elderly who provided information mentioned was volunteering or making merit which is considered an important factor influencing the active aging of Thai elderly.

6. DISCUSSION

In the first objective which assessed variables like healthcare, mental health, attitude, social support, quality of life, life satisfaction and previous and adjusted active aging, it was found that all these variables had high average levels indicating a positive way of life among older Thai people. This aligns with previous studies by [Insin et al. \(2021\)](#) and [Wongkinee et al. \(2013\)](#) which also reported high levels of active aging among the Thai elderly. The second objective analyzed and classified factors related to active aging in Thai elderly people in Phetchabun Province. The result identified nine key factors: living a happy and valuable life, injury and illness prevention, positive attitude and sufficiency, knowledge about aging diseases, living with purpose, recreational activities, family care, health knowledge and self-esteem. These findings are consistent with several previous studies such as [Sukmaitri et al. \(2022\)](#), [Ratana-Ubol \(2020\)](#) and [Lopez-Ruiz et al. \(2021\)](#) which highlighted the importance of happiness, good physical and mental health, safety, social engagement, lifelong learning, life satisfaction and quality of life as essential components of active aging.

The researcher used a new variable, adjusted active aging as the dependent variable to study according to the third objective as a result of the factor analysis in the second objective. The third objective is to study factors affecting the adjusted active aging of the Thai elderly. The independent variables used in the study consisted of four variables: health care, mental health, attitude, and social support. The result showed that four variables had a significant effect on the adjusted active aging of the Thai elderly. It pointed out that the health care factor had the highest influence followed by social support, mental health and elderly attitudes, respectively. This is in line with a study by [Ratana-Ubol \(2020\)](#) which discovered that aspects of an older person's active aging such as their personal health have a significant impact on their happiness. Furthermore, it aligns with the findings of [Sukmaitri et al. \(2022\)](#) which showed that maintaining one's own physical and mental health has an impact on the active aging of older Thai people. This is in line with a study by [Briegas et al. \(2020\)](#) which found that senior citizens' quality of life is impacted by their views toward active aging. According to the findings of [Wongkinee et al.'s \(2013\)](#) study, attitudes of the elderly and social support had a major impact on the active aging of Thai seniors. This aligns with the findings of [Rojpaisarnkit's \(2016\)](#) study which demonstrated that family and social engagement significantly impact senior citizens' active aging. This also aligns with the findings of the [Sukmaitri et al.'s \(2022\)](#) study which showed that social group engagement and safe living conditions influence older adults' active aging. In a nutshell, the outcome aligns with the research conducted by [Díaz-López et al. \(2016\)](#) and [Zhao and Wu \(2018\)](#) which discovered that encouraging social engagement through lifetime education and self-development in social groups

impacts senior citizens' active aging. In a nutshell, it is clearly indicated that four factors have a significant effect on the active aging of Thai elderly people. Thai elderly people must pay attention to these factors to build their active aging which will affect improved quality of life and longevity.

In the fourth objective which aims to create a new model of the adjusted active aging of the Thai elderly, the researchers used research results from both quantitative and qualitative research to summarize the new model. From the results of both studies, a new model of Thailand's adjusted active aging has been obtained as shown in Figure 2. The study concludes that there are three important factors affecting the active aging of Thai seniors. The first factor is health care which includes physical and mental health care. The second factor relates to the attitude of the elderly which has two components: a positive attitude and volunteering or making merit. Finally, the third factor is social support which consists of three parts: family support, government support and support from the community where the elderly live.

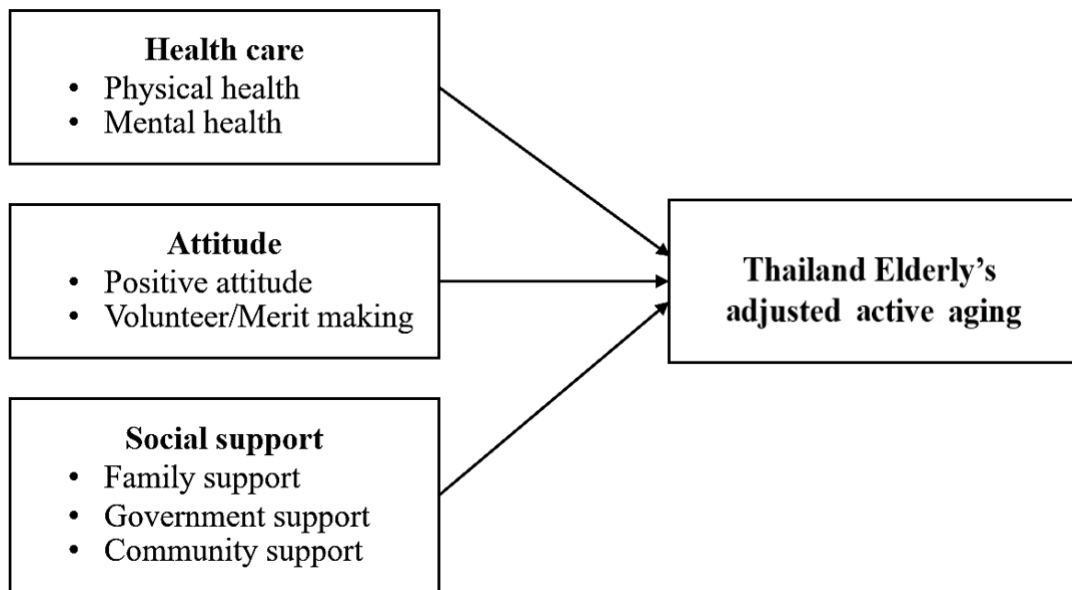


Figure 2. Key factors affecting the Thailand elderly's adjusted active aging model.

7. CONCLUSION AND RECOMMENDATION

The results of this study indicate that all important factors related to the active aging of Thai elderly are at a high level including healthcare, mental health, attitude, social support, previous active aging, quality of life, life satisfaction and adjusted active aging. It reflects the lifestyle and well-being of the Thai elderly in a good way. When the researcher used various variables regarding active aging from previous literature to analyze new factors, it was found that nine elements could be separated that reflect active aging in Thai elderly people, i.e., living a happy and valuable life, care and prevention of injury and illness, positive attitude and sufficiency, knowledge about aging disease, living with purpose, recreational activities, family care, health knowledge and self-esteem. As a result of the factor analysis, the researcher introduced a new variable, adjusted active aging as an important variable in the study of factors affecting the active aging of the Thai elderly. The results of the study indicate four important variables that affect the adjusted active aging of the Thai elderly such as health care, mental health, attitude and social support. When all study results from both quantitative research and qualitative research were combined, the results were summarized to create a new model of adjusted active aging for the Thai elderly. It can be concluded that the three main factors that affect the active aging of Thai elderly include (1) health care which includes both physical and mental care. (2) The attitude of the elderly, both in terms of a positive attitude and having a volunteering spirit or making merit and (3) social support which has three important components: family, government and community support.

The researcher recommends that the government and community-level organizations use the research results to formulate policies, strategies, plans and activity programs to promote active aging among the Thai elderly. Special considerations are divided into the following two parts: The first part is to test the elderly for their level of active aging using all nine factors from the study and the second part is to use the three factors that affect the elderly's active aging for planning to promote active aging in Thai people which include health care management, attitudes and social support. As for the business sector, the researcher offers the view that research results can be used to design products to promote active aging in the elderly such as a program to test the active aging of the elderly, designing exercise activities that promote active aging and creating products that promote exercise and enhance mental health in the elderly. In addition, other academics can use the results of this research especially the newly adjusted active aging model for future academic development. By using the model to conduct research in other areas to gain a comparative perspective and create an active aging database that will be of academic benefit in the future. Other future research should study other factors that may affect active aging in Thai elderly as concluded from Foster and Walker's (2021) study which found that aging is largely influenced by extrinsic or environmental influences as well as intrinsic genetic elements such as predispositions to specific health conditions.

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