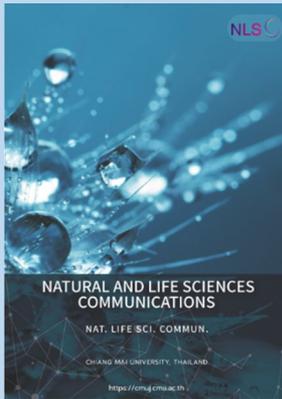


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Happiness and Associated Factors of Elderly People in the Rural Area of Pathum Thani Province, Thailand: A Cross-Sectional Study

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ABSTRACT

Happiness is a significant factor affecting the quality of life of elderly people, especially in rural areas where environmental factors differ from urban areas. This cross-sectional research study aimed to examine happiness and factors associated with happiness in elderly people living in rural areas of Pathum Thani Province, Thailand. The sample consisted of 390 individuals aged 60 and above who resided in rural communities in Pathum Thani province, selected through a multi-stage random sampling method. Data were collected using structured interview forms. Happiness levels were assessed using the Thai Happiness Indicator-15 (THI-15). Data were analyzed using descriptive statistics and multiple logistic regression analysis. The results indicated that a majority of elderly individuals were lower happy than the general population (37.7%), followed by those who reported being equally happy (31.5%) and those who were higher than the general population (30.8%). Factors significantly associated with lower happiness among the elderly were female (Adjusted Odds Ratio [AOR] = 1.73, 95% Confidence Interval [CI]=1.11-2.71, *P*-value = 0.015), monthly income of less than 10,000 baht (AOR = 1.76, 95% CI = 1.10-2.84, *P*-value = 0.020), moderate co-morbidity (AOR = 1.87, 95% CI = 1.10-3.73, *P*-value = 0.047), having cognitive impairment (AOR = 1.38, 95% CI = 1.12-2.17, *P*-value = 0.016), and not participating in community activities (AOR = 1.89, 95% CI = 1.11-3.19, *P*-value = 0.018). These results suggest that health professionals should prioritize preventing cognitive impairment, promote community engagement through group activities, and educate older adults on self-care for managing health conditions.

Keywords: Community participation, Elderly, Happiness, Mental health status, Rural area

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INTRODUCTION

The demographic structure of Thailand has undergone significant changes over the past two to three decades. The proportion of elderly people has increased rapidly, while the percentage of children has decreased. Currently, the average life expectancy at birth for the Thai population is 71.9 years for males and 80.0 years for females (Institute for Population and Social Research, 2024). This demographic shift indicates a marked rise in the elderly population, with over 20% of the total population aged 60 and above. According to the National Statistical Office, 20.2% of Thailand's total population falls within this age group. Furthermore, it is projected that within the next ten years, Thailand will transition into a super-aged society, with the elderly population expected to account for 28.0% of the total population (National Statistical Office, 2024).

The rapid increase in the elderly population emphasizes the growing importance of addressing health-related issues in Thai society in the future. Consequently, the elderly should be a focus of greater attention as they experience numerous changes, including physical, mental, and social transformations. These changes can lead to a decline in physical function and the body's resistance to illness, increasing health problems, particularly chronic diseases (Terathongkum and Kittipimpanon, 2023) such as diabetes, hypertension, cardiovascular diseases, and cancer (Sawangjit et al., 2023). Furthermore, the elderly may face the loss of loved ones and a decline in social status, which can directly impact their mental, emotional, and social well-being. These circumstances contribute to a decrease in happiness among the elderly and can lead to mental health issues (Boontoch and Nuntaboot, 2017; Abey-Nesbit et al., 2023).

The involvement of the elderly in family matters has notably diminished, resulting in their inability to participate in various occupations. This demographic often experiences neglect, insufficient caregiving, and suboptimal familial relationships. There is a lack of recognition and respect from their children regarding their contributions and significance (Hwang and Sim, 2021). Consequently, these elements adversely affect the overall happiness of the elderly population. Data indicates that their happiness score averages 6.74 out of a possible 10 (Kruaaem, 2018). The rising elderly population is thus precipitating significant social changes, posing challenges for healthcare agencies to develop effective methods and strategies that facilitate the elderly's ability to thrive and engage fully within society (Somboon et al., 2018).

Caring for the elderly to ensure their happiness in terms of physical, mental, and social well-being is essential and impacts their quality of life (Paithoon et al., 2025). Pathum Thani Province is one of the areas where the elderly population is continuously increasing (Department of Older Persons, 2023). The elderly in this region often experience physical deterioration, particularly in musculoskeletal disorders and chronic diseases (Kim et al., 2024). Additionally, family members in the workforce are increasingly working outside the home, leaving elderly family members to care for the household. The cultural changes in society have reduced the role of the elderly in the family and community, and the respect that the elderly once received, especially in their own families, has diminished. This leads to a decrease in the happiness of the elderly and can result in mental health issues (Sun, 2023).

Happiness plays a crucial role in the overall well-being of older adults, significantly impacting their physical, mental, and social health. Studies have shown that higher levels of happiness correlate with better physical health, reduced risk of chronic diseases, and improved cognitive function (Wanphong and Hongngam, 2018; Somboon et al., 2018). Furthermore, happiness fosters greater social engagement and emotional resilience, which are vital for maintaining a high quality of life. Conversely, unhappiness is linked to negative outcomes such as increased stress, depression, social isolation, and a higher risk of morbidity. Understanding the factors associated with happiness among older adults is therefore crucial for developing

effective interventions that promote healthy aging and enhance their overall well-being (Anantanasuwong et al., 2022)

Happiness among the elderly is influenced by multiple social, economic, and environmental factors, which differ between rural and urban settings. In rural areas, elderly individuals often experience strong community ties, frequent social interactions, and a slower pace of life, which contribute positively to their happiness. However, challenges such as limited access to healthcare, economic constraints, and fewer social welfare services may lead to stress and reduced well-being (Tipwareerom et al., 2021). Conversely, urban elderly populations benefit from better healthcare services, social welfare programs, and recreational activities, which can enhance their happiness. However, urbanization and modernization have contributed to increased social isolation, weakened family connections, and heightened stress levels, negatively impacting happiness (Lapha et al., 2018). The balance between these advantages and challenges varies across different urban and rural regions, making it essential to explore how these factors influence elderly well-being.

The study on happiness among elderly individuals in rural Pathum Thani revealed a significant gap in understanding the complex interplay of personal, social/environmental, economic, and health factors that contribute to the well-being of older adults in these areas. Furthermore, the influence of cultural and familial dynamics on the happiness of elderly individuals in rural Thailand has not been thoroughly examined. While previous studies have explored happiness determinants in urban populations (Lapha et al., 2018), there remains a lack of research focusing specifically on rural elderly individuals. Rural and urban environments present distinct differences in factors influencing happiness. Rural elderly individuals often have strong community ties and access to nature, yet they may face challenges such as limited healthcare services, lower income levels, and restricted social activities. As a result, the researcher aimed to explore the levels of happiness and the factors associated with it among the elderly in rural Pathum Thani Province. The findings from this study will provide valuable insights for developing mental health promotion strategies aimed at enhancing the happiness of older adults. Additionally, it will help in designing care models that empower seniors to take charge of their well-being and maintain a high quality of life, ultimately leading to sustainable and age-appropriate happiness.

MATERIAL AND METHODS

Study design, population, and samples

This cross-sectional study examined the level of happiness and factors associated with happiness in elderly people living in rural areas of Pathum Thani Province, Thailand. The research hypothesis was that personal, social, environmental, economic, and health factors were associated with happiness in elderly people living in rural areas. The conceptual framework for this study was developed to classify factors under investigation based on relevant research from the literature review (Maximiano-Barreto et al., 2024; Paninakul et al., 2019). Similar factors were categorized into the same group and divided into four groups: personal factors, social and environmental factors, economic factors, and health factors. The classification of these factors is summarized in Table 1, which offers an overview of their potential impact on happiness among the elderly.

The population studied comprised all elderly individuals aged 60 years and above, totaling 106,430 people residing in rural areas of Pathum Thani Province (Department of Older Persons, 2023). The samples included 390 elderly individuals, determined using Daniel's (1995) formula for estimating proportions with a known population size. The calculation was based on a confidence level of 95% ($Z = 1.96$), a proportion of happiness among the elderly of 0.49 ($P = 0.49$) (Prommi et al., 2019), and an allowable error of 5% ($e = 0.05$). By substituting these values into the

formula, the required sample size was found to be 325 individuals. To address potential errors in data collection, non-response issues, and incomplete data, the sample size was increased by 20%. This adjustment resulted in a final sample size of 390 participants for the study.

Table 1. The conceptual framework of this study.

Factor Group	List of Factors Affecting Happiness
Personal factors	Gender, Age, Marital status, Education level, Occupational, Monthly income, Living arrangements
Social and environmental factors	Family relationship, Social support, Participation in community activities
Economic factors	Health insurance, Source of income,
Health factors	Co-morbidity, Perceived severity of illness, Cognitive impairment

Sampling method

This study utilized a multi-stage random sampling method, which included the following steps: 1) Pathum Thani was divided into seven districts. The researcher employed simple random sampling by drawing lots without replacement to select two districts: Khlong Luang and Lat Lum Kaeo. 2) Proportional stratified random sampling was employed to determine the sample size based on the population distribution within each district. This method resulted in 281 participants from the Khlong Luang District and 109 participants from the Lat Lum Kaeo District. 3) In the final step, systematic random sampling was used to select participants from a list of eligible elderly individuals in each district, ensuring that every individual had an equal chance of being included. The sampling interval (I) was determined by dividing the total number of eligible individuals by the required sample size in each district. A random starting point was chosen, and subsequent participants were selected at regular intervals of interval until the target sample size of 390 individuals was achieved.

The inclusion criteria for this study were as follows: 1) elderly individuals aged 60 years or older residing in rural communities of Pathum Thani Province; 2) elderly individuals who are fully conscious, able to communicate in Thai or respond appropriately, and capable of undergoing evaluations or assessments using various tools; and 3) individuals who willingly consent to participate in interviews and data collection. The exclusion criteria included elderly individuals diagnosed by a physician with severe dementia or those who were assessed using the Thai Mental State Examination (TMSE) and received a TMSE score of less than 12.

Instrument of the study

The tools included structured interviews created by the researcher after reviewing relevant literature and studies. These tools consisted of seven sections, detailed below:

Part 1: General interview form: The researcher developed a structured interview to record the general characteristics of the elderly participants. The questions included open-ended and closed-ended formats and comprised 11 items: gender, age, marital status, education level, occupation, monthly income, living arrangements, participation in community activities, health insurance, sources of income, and health issues.

Part 2: Family relationship assessment form: This part was adapted from Chinsangnet (1995); this tool measured the feelings and opinions of elderly participants regarding family relationships. It consisted of 15 questions, assessed through interviews. The response options were "Yes," "Uncertain," and "No," scored

as 3, 2, and 1 for positive questions and the reverse for negative questions. Scores were interpreted into three levels: 15–26 points indicated poor family relationships, 27–35 points indicated moderate family relationships, and 36–45 points indicated good family relationships

Part 3: Social support evaluation form: This section is adapted from Ratana (2009) and consists of 21 items measured on a 5-point rating scale: "Most true," "Very true," "Moderately true," "Slightly true," and "Least true," scored as 5, 4, 3, 2, and 1, respectively. Scores were classified into three levels based on Best's (1977) criteria: mean scores of 1.00–2.33 indicated low social support, mean scores of 2.34–3.67 indicated moderate social support, and mean scores of 3.68–5.00 indicated high social support.

Part 4: Charlson comorbidity index (CCI): This section utilized a standard tool developed by Charlson et al. (1987) to evaluate the presence of comorbidities in elderly individuals. The index consists of weighted scores for 19 different comorbidity groups, with each group assigned a score ranging from 1 to 6 points. The total possible score can range from 0 to 37. The categories are defined as follows: a score of 0 indicates no comorbidities, scores of 1–2 indicate mild comorbidities, scores of 3–4 indicate moderate comorbidities, and scores of 5 or higher indicate severe comorbidities.

Part 5: Perceived severity of illness scale: This part was adapted from Ratthanapun (1998). This scale assessed participants' perceptions of the severity of their illnesses using a linear analog scale from 0 to 100, where higher scores indicated higher perceived illness severity.

Part 6: Thai Mental State Examination (TMSE): This section utilized a standard tool created by the Train the Brain Forum Committee (1963) to assess cognitive impairment. The tool includes questions and commands that evaluate six dimensions: orientation, memory, attention, calculation, language, and recall. A TMSE score of 23 or below indicates cognitive impairment.

Part 7: Thai Happiness Indicators (THI-15): This part used a standard tool developed by Mongkol et al. (2001) to assess the happiness of the general Thai population. The total score was 45 points, categorized as follows: 33–45 points indicated higher happiness than the general population, 27–32 points indicated equal happiness as the general population, and ≤ 26 points indicated lower happiness than the general population.

Three experts in health professions, nursing, and public health evaluated the validity of the assessment tools. The Index of Item-Objective Congruence (IOC) was employed to determine validity, yielding the following scores: the general interview form received an IOC value of 1.00, the family relationship assessment form scored 0.96, the social support evaluation form achieved 0.95, and the perceived severity of illness scale was assessed at 1.00. To establish reliability, the tools were pilot-tested with a group of 30 older adults who shared characteristics with the main study sample but were not part of the study. The reliability was measured using Cronbach's Alpha Coefficient, resulting in the following scores: the family relationship assessment form had a coefficient of 0.96, the social support evaluation form was 0.94, the Charlson Comorbidity Index scored 0.88, the Thai Mental State Examination (TMSE) achieved 0.90, and the Thai Happiness Indicators recorded a score of 0.92.

Data collection

The researcher first sought permission from the director of the Sub-district Health Promotion Hospital in the area. After receiving approval, the researcher explained the research objectives and data collection procedures to the elderly participants and obtained their consent. Once the elderly individuals agreed to participate in the study, the researcher personally collected the data. Before this, the

researcher trained the research assistants on the data collection procedures. The researcher and the research assistants then conducted structured interviews, which took approximately 45 minutes for each participant.

Statistical analysis

In this research, data was analyzed using the Statistical Package for the Social Sciences (SPSS) program, version 29.0.1.0 license. Descriptive statistics were employed to outline the sample characteristics, including frequency, percentage, standard deviation, and range. In this study, happiness was initially measured on three levels. For logistic regression analysis, the first two categories were combined into a single group representing individuals with comparable or higher levels of happiness. This approach was used because these two levels share a similar positive well-being status, making it meaningful to analyze them together in contrast to those with lower happiness than the general population. Multiple logistic regression (MLR) was utilized to investigate factors related to the lower happiness of elderly people. Additionally, the multicollinearity among variables was assessed before performing the multiple logistic regression analysis, following the preliminary agreement regarding the use of this statistic. This analysis involved selecting variables through the enter selection method, displaying both the Crude Odds Ratio (COR) from binary logistic regression (BLR) and the Adjusted Odds Ratio (AOR) from multiple logistic regression (MLR) alongside the 95.0% Confidence Interval (CI).

Ethical considerations

The study protocol was approved by the Institutional Review Board (IRB) of Valaya Alongkorn Rajabhat University under Royal Patronage (IRB No: 0070/2024 and COA No. 0095/2024), with certification granted on November 16, 2024. The authors affirmed that informed consent was acquired from all participants, who needed to give this consent before taking part in the research.

RESULTS

Personal factors and economic factors of elderly individuals

The analysis of personal factors revealed that the majority were female (55.6%), aged between 70-79 years (50.8%), with an average age of 71.0 years (SD = 6.6). Most were married (55.9%), graduated from primary school (42.8%), and worked as farmers (32.1%), while 36.2% were unemployed. Regarding living arrangements, 40.5% of the sample lived with their children and spouses, followed by 34.1% living with their children. As for the economic factors, most participants had universal coverage insurance (54.4%) and earned a monthly income of less than 10,000 baht per month (54.1%), with an average monthly income of 11,951.3 baht (SD = 12,896.8). The primary sources of income for most were self-employment, pensions, or savings (55.1%).

Health factors and social and environmental factors of elderly individuals

The analysis of health factors indicated that 26.7% of the sample had no co-morbidities. Additionally, 32.3% had mild co-morbidities, while 41.0% had moderate co-morbidities, resulting in an average Charlson comorbidity index (CCI) score of 1.7 (SD=1.4). The most prevalent chronic conditions in the sample included hypertension (64.9%), diabetes (55.4%), high cholesterol (30.8%), osteoarthritis (13.8%), coronary artery disease (7.7%), and ischemic heart disease (7.4%). In terms of perceived severity of illness, the average score for the sample was 48.1 (SD=18.8), and 56.7% of participants exhibited cognitive impairment. Regarding social and environmental factors, a majority of the sample reported good family

relationships (82.1%), a moderate level of social support (56.9%), and participated in community activities (Table 2).

Table 2. Number and percentage of the sample categorized by health factors and social and environmental factors (n=390).

Variables	Number (Percentage)
Co-morbidity	
No co-morbidities	104 (26.7)
Mild co-morbidities	126 (32.3)
Moderate co-morbidities	160 (41.0)
Mean= 1.7, SD= 1.4 Min= 0, Max= 4	
Cognitive impairment	
Yes	221 (56.7)
No	169 (43.3)
Mean= 24.0, SD= 5.1, Min = 13, Max= 30	
Family relationship	
Poor (15-26 Scores)	11 (2.8)
Moderate (27-35 Scores)	59 (15.1)
Good (36-45 Scores)	320 (82.1)
Mean= 39.2, SD= 4.8, Min= 17, Max= 45	
Social support	
Low (Mean 1.00-2.33 Scores)	56 (14.4)
Moderate (Mean 2.34-3.67 Scores)	222 (56.9)
High (Mean 3.68-5.00 Scores)	112 (28.7)
Mean= 3.2, SD= 0.7, Min= 1.43, Max= 4.00	
Participation in community activities	
Not participating	120 (30.8)
Participating	270 (69.2)

Level of happiness of elderly people in rural areas of Pathum Thani Province

Table 3 shows the analysis of the happiness levels of elderly people in rural areas of Pathum Thani Province using the Thai Happiness Indicators (THI-15). The majority of the samples were lower happiness than the general population (37.7%), followed by those who were equally happy as the general population (31.5%) and those who were higher happiness than the general population (30.8%). The happiness scores of the sample ranged from 2 to 45, with an average score of 28.9 (SD= 8.2).

Table 3. The number and percentage of the sample classified by happiness level using THI-15 (n=390).

Level of happiness	Number	Percentage
Lower happiness than the general population	147	37.7
Equal happiness as the general population	123	31.5
Higher happiness than the general population	120	30.8
Mean= 28.9, SD= 8.2, Min= 2, Max= 45		

Factors associated with the lower happiness of elderly people

Table 4 indicates that various factors were significantly associated with lower happiness among elderly individuals residing in rural areas. These factors encompassed females, monthly income of less than 10,000 baht, moderate co-morbidity, cognitive impairment, and not participating in community activities. The results were shown with the Adjusted Odds Ratio (AOR), 95% Confidence Interval (CI), and *P*-value. The study found that elderly females were likely to have lower happiness than the general population at 1.73 times greater than those of elderly males (AOR=1.73, 95% CI=1.11-2.71, *P*-value=0.015). Furthermore, elderly people who had a monthly income of less than 10,000 baht were likely to have lower happiness than the general population at 1.76 times greater than those who had a monthly income of 10,000 baht or more (AOR=1.76, 95% CI=1.10-2.84, *P*-value=0.020). Moreover, elderly people who had moderate co-morbidity were likely to have lower happiness than the general population at 1.87 times greater than those without co-morbidities (AOR=1.87, 95% CI=1.10-3.73, *P*-value=0.047). In addition, elderly people who had cognitive impairment were likely to have lower happiness than the general population at 1.38 times greater than those without cognitive impairment (AOR=1.38, 95% CI=1.12-2.17, *P*-value=0.016). Finally, elderly people who did not participate in community activities were likely to have lower happiness than the general population at 1.89 times greater than those who participated in community activities (AOR=1.89, 95% CI=1.11-3.19, *P*-value=0.018).

Table 4. Factors associated with lower happiness in elderly people using multiple logistic regression (n=390).

Variables	Number (%)	BLR			MLR		
		COR	95%CI	<i>P</i> -value	AOR	95%CI	<i>P</i> -value
Gender							
Male	173 (44.4)	1.00			1.00		
Female	217 (55.6)	1.51	0.99-2.29	0.053	1.73	1.11-2.71	0.015*
Age (Years)							
< 70	144 (36.9)	1.00			1.00		
≤ 70	246 (63.1)	1.08	0.71-1.65	0.709	1.05	0.66-1.66	0.842
Marital status							
Single/separated/divorced	172 (44.1)	1.05	0.70-1.59	0.806	1.13	0.72-1.75	0.601
Married	218 (55.9)	1.00			1.00		
Education level							
Primary school	167 (42.8)	1.19	0.79-1.81	0.392	1.01	0.65-1.56	0.980
Secondary school or higher	249 (57.2)	1.00			1.00		
Occupational							
Unemployed	141 (36.2)	1.51	1.02-2.31	0.047	1.34	0.73-2.47	0.342
Employed	249 (63.8)	1.00			1.00		
Living arrangements							
Lived alone	22 (5.6)	1.15	0.48-2.77	0.749	1.53	0.57-4.07	0.399
Lived with other	368 (94.4)	1.00			1.00		
Health insurance							
Having health insurance	361 (92.6)	1.00			1.00		
Private health insurance	29 (7.4)	1.16	0.52-2.57	0.711	1.68	0.71-3.99	0.240
Monthly income							
<10,000 Baht	211 (54.1)	1.74	1.15-2.65	0.009	1.76	1.10-2.84	0.020*
10,000 Baht or more	179 (45.9)	1.00			1.00		

Variables	Number (%)	BLR			MLR		
		COR	95%CI	P-value	AOR	95%CI	P-value
Source of income							
Self-employment, pensions, or savings	215 (55.1)	1.30	0.86-1.97	0.211	1.24	0.80-1.93	0.336
Children	175 (44.9)	1.00			1.00		
Co-morbidity							
No co-morbidities	104 (26.7)	1.00			1.00		
Mild co-morbidities	126 (32.3)	0.82	0.47-1.43	0.485	1.01	0.54-1.87	0.978
Moderate co-morbidities	160 (41.0)	1.74	1.04-2.90	0.034	1.87	1.10-3.73	0.047*
Perceived severity of illness							
-	-	1.01	0.98-1.02	0.238	0.99	0.98-1.01	0.420
Cognitive impairment							
Yes	221 (56.7)	1.48	1.02-2.25	0.047	1.38	1.12-2.17	0.016*
No	169 (43.3)	1.00			1.00		
Family relationship							
Poor/Moderate	70 (17.9)	1.03	0.60-1.76	0.917	1.06	0.60-1.88	0.850
Good	320 (82.1)	1.00			1.00		
Social support							
Low	56 (14.4)	1.98	1.04-3.78	0.037	1.92	0.92-4.00	0.083
Moderate/High	334 (85.6)	1.00			1.00		
Participation in community activities							
Not participating	120 (30.8)	2.16	1.34-3.48	0.001	1.89	1.11-3.19	0.018*
Participating	270 (69.2)	1.00			1.00		

Note: 1.00= Reference group, COR =crude odds ratio, AOR =adjusted odds ratio, CI= confidence interval, BLR= binary logistic regression (BLR), and MLR= multiple logistic regression *Statistically significant at P-value <0.05

DISCUSSION

In a study on the happiness of elderly people in rural areas of Pathum Thani Province, 390 individuals were assessed using the THI-15. The results demonstrated that the majority of elderly individuals were lower happy than the general population (37.7%), followed by those who were equally happiness as the general population (31.5%), and those who were higher than the general population (30.8%). This aligns with the findings of Saenborisut and Charerntanyarak (2020), which indicated that 44.8% of their sample reported low levels of happiness. Similarly, Lapha et al. (2018) found that over half (55.9%) of their sample had happiness scores lower than those of the general population. This emphasizes the contextual factors that affect happiness in the elderly, such as health issues, economic difficulties, and social relationships. In rural areas, older adults often encounter difficulties in accessing essential resources and services, such as healthcare and financial support. The fact that many elderly individuals report lower levels of happiness may be linked to their diminished roles in family and community life, as well as feelings of loneliness. These elements are significant contributors to mental health and overall quality of life. Conversely, some elderly individuals report feeling equally happy or even happier than the general population (Wanphong and Hongngam, 2018).

Gender was associated with lower happiness among elderly people. The observed variation in happiness levels among the elderly can be attributed to gender differences that shape their roles, status, and life experiences. These factors collectively contribute to diverse outcomes in well-being across different demographics. Elderly males typically enjoy more stable social and economic roles, along with recognition as family leaders, which enhances their sense of self-worth. In contrast, elderly females may experience limitations in their roles, often due to

responsibilities like family caregiving or economic dependence on others. They also face a higher risk of chronic health problems and experience increased stress. Additionally, a lack of social interactions or diminished community involvement further raises the risk of poor mental health among elderly females (Tipwareerom et al., 2021). Elderly females reported lower happiness levels than elderly males, possibly due to increased stress, caregiving responsibilities, and societal expectations. The findings are consistent with the study by Maximiano-Barreto et al. (2024), which found that elderly females often report lower levels of happiness than elderly males. This disparity is linked to their social roles in family caregiving and challenges in accessing economic resources. Additionally, the research conducted by Shojima et al. (2024) supports these findings, indicating that elderly females may experience decreased happiness due to mental and emotional issues related to caregiving, as well as the increased health problems they encounter as they age.

Monthly income was associated with lower happiness of elderly people in rural areas. This can be explained by the insufficient income that prevents elderly individuals from fulfilling their needs, resulting in low self-esteem and feelings of worthlessness due to their dependence on others for financial support. The study found that 54.1% of elderly individuals had a monthly income of less than 10,000 baht. Thus, income serves as a crucial indicator of economic and social status, as well as a factor affecting daily life (Jaemtim et al., 2019). Meeting basic needs is essential for happiness and has a positive impact on mental health. If elderly individuals perceive their income as insufficient, it can adversely affect their mental well-being, resulting in a diminished sense of capability and a lower level of happiness. In conclusion, elderly people with low monthly income experienced lower happiness than those with high income. This was consistent with the study by Saenborisut and Charerntanyarak (2020), which found that monthly income was related to the happiness of elderly people. The study conducted by Arias-Monsalve et al. (2022) found that elderly individuals with lower incomes tend to experience lower levels of happiness, primarily due to their inability to meet basic needs such as healthcare and participation in recreational activities that enhance well-being. In addition, research by Shah et al. (2021) revealed that elderly individuals with higher incomes often enjoy a better quality of life and greater happiness as they have more accessible healthcare services and community support.

Co-morbidity was associated with lower happiness of elderly people in rural areas. This can be explained by the fact that co-morbidity reflects the impact of physical health on the mental health and happiness of elderly individuals. Co-morbid conditions such as diabetes, hypertension, and heart disease significantly impact the quality of life for elderly individuals. This is due to the need for managing chronic symptoms, ongoing treatment, and dependency on others for care. Additionally, co-morbidities may limit the ability to perform daily activities and participate in community life, which affects their sense of self-worth and life satisfaction. Furthermore, co-morbid conditions become an important factor that reduces the happiness of elderly individuals due to delayed treatment or lack of appropriate care. Effective policy planning that promotes comprehensive health management and ensures access to quality healthcare services is essential for improving the happiness and quality of life of elderly individuals in rural areas. In conclusion, elderly people with moderate comorbidity experienced lower happiness than those with no comorbidity. This is consistent with the study by Arias-Monsalve et al. (2022), which found that elderly individuals with multiple comorbidities tend to be less happy than those without comorbidities and aligns with the study by Papi and Cheraghi (2021) also found that co-morbid conditions can lead to increased stress and anxiety among elderly individuals, which negatively impacts their happiness and mental health.

Cognitive impairment was associated with lower happiness of elderly people in rural areas. This can be explained by the fact that cognitive impairment leads to a loss of memory and limitations in learning, concentration, calculation, language, movement, and abstract thinking. Even without perceptual disorders, cognitive problems can lead to stress and unhappiness in elderly individuals as their abilities

in different areas decline. This decline can foster negative feelings about themselves and reduce their overall happiness. In conclusion, elderly people with cognitive impairment experience lower happiness than those without cognitive impairment. This is consistent with the study by Papi and Cheraghi (2021), which found that elderly individuals with cognitive impairment are more likely to report lower levels of happiness compared to those without this condition. Furthermore, a study by Tan et al. (2019) found that cognitive impairment can result in elderly individuals living in rural areas facing challenges related to their well-being and healthcare. This often leads to increased stress and anxiety, which negatively impacts their mental health and overall happiness.

Not participating in community activities was associated with lower happiness of elderly people in rural areas. Engaging in community activities helps elderly individuals adapt to changes, enhancing their life satisfaction and leading to greater daily happiness. As individuals age or retire, they often experience a decline in their social roles. Engaging in activities, such as joining an elderly club, can help promote development in various areas. It allows elderly people to feel valued, capable, and not like a burden to others (Karuhadej et al., 2018). Participating in community activities brings joy to the lives of elderly individuals. However, if they do not engage in these activities, they may miss out on opportunities to share ideas and interact with others. This lack of social interaction can lead to mental health issues and a decline in overall happiness in their daily lives. In conclusion, elderly people who did not participate in community activities reported lower happiness than those who did engage in community activities. This is consistent with the study by Shah et al. (2021), which found that elderly individuals who participate in community activities in rural areas are happier than those who do not, as participation provides opportunities to develop social relationships, reduce loneliness, and increase life satisfaction. Moreover, the study by Fernandez-Portero et al. (2023) also found that engaging in community activities enhances social support and increases emotional connections among elderly people, which positively impacts mental health and happiness in life. One potential limitation of this study is the possibility of reverse causality. Our findings indicate that not participating in community activities is associated with lower happiness. However, it is also possible that elderly individuals who experience lower happiness may choose to withdraw from community activities.

Family relationships and social support were not statistically significant factors in the lower happiness levels of elderly individuals. This may be because the samples had a consistent level of family and social support, which reduced variability and limited the influence of these factors on happiness. Additionally, the impact of family relationships and social support might be mediated by other variables, such as economic stability, personal health, or psychological resilience. Furthermore, subjective perceptions of support may differ from actual social engagement, which could also influence the findings. In Thai culture, spirituality, and religious practices significantly influence happiness, especially among the elderly. Buddhist teachings emphasize mindfulness, acceptance, and inner peace, which can enhance emotional well-being. Many elderly people actively engage in religious activities, such as visiting temples, making merit, and practicing meditation. These activities have been associated with increased life satisfaction and reduced stress. Although this study did not directly evaluate the impact of spirituality and religious practices, future research should investigate these factors as potential contributors to happiness among the elderly in Thailand.

This study has several limitations: Firstly, the cross-sectional study design describes the relationship between factors and happiness among elderly individuals at a specific point in time, but it cannot establish a definitive cause-and-effect relationship. Future research should consider employing longitudinal study designs to track changes in happiness levels over time and explore causal pathways. Secondly, the study was conducted in a specific region, which may limit the generalizability of the findings to elderly populations in different geographical or socio-economic contexts. Expanding future studies to include diverse settings, both

rural and urban, across multiple provinces or countries would enhance the applicability of the results. Thirdly, our study primarily relied on quantitative survey methods, which may not fully capture the subjective experiences and perceptions of happiness among the elderly. Incorporating qualitative approaches, such as in-depth interviews or focus group discussions, could provide richer insights into the personal and cultural factors affecting happiness. Finally, while this study examined key determinants of happiness, future research could explore additional variables such as psychological resilience, and cultural influences to gain a more comprehensive understanding of elderly well-being.

This study has several strengths. Firstly, this study offers valuable insights into the happiness of elderly individuals living in rural areas, which are often overlooked in public health research. By concentrating on rural elderly populations, the research highlights unique socio-economic and environmental factors that affect their happiness. This contributes to a more comprehensive understanding of the well-being of older adults. Secondly, the use of validated measurement tools ensures reliable and accurate data collection. This structured methodology enables comparability with other studies, promoting further research on elderly happiness in various contexts. Thirdly, this study enhances public health knowledge by identifying key factors related to happiness, which can guide targeted interventions and policy recommendations aimed at improving the well-being of older populations. For future research, this study recommends expanding the sample to include a more diverse group from both rural and urban areas to ensure broader generalizability. Additionally, using mixed-method approaches, such as qualitative interviews, could provide deeper insights into the personal and cultural factors that influence happiness.

CONCLUSION

This study highlights the key factors that contribute to lower happiness among elderly individuals living in rural areas of Pathum Thani Province, Thailand. The main factors contributing to this decrease in levels of happiness included being female, having a monthly income of less than 10,000 baht, experiencing moderate co-morbidity, suffering from cognitive impairment, and not participating in community activities. Recommendation for public health practices: Firstly, the local public health agencies can develop programs that encourage elderly participation in community activities to enhance their sense of self-worth and reduce feelings of loneliness. Organizing events such as community gatherings or senior clubs, cooking classes, or group exercises can help foster relationships within the community, allowing elderly individuals to feel more integrated. This sense of belonging can significantly enhance their overall happiness. Secondly, the primary health center should conduct regular mental health screenings for elderly individuals, concentrating on detecting signs of depression, anxiety, or other psychological conditions that could adversely affect their well-being. Thirdly, accessible healthcare services should include senior clinics, proactive health screenings, and age-appropriate physical exercise programs. These initiatives can enhance the quality of life for elderly individuals. Lastly, local agencies should create economic support programs to promote part-time work, provide financial assistance or welfare for low-income elderly individuals, and generate income opportunities through community activities.

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AUTHOR CONTRIBUTIONS

Sootthikarn Mungkhunthod (SM) contributed to conceptualization, data curation, methodology development, and project administration. SM was also involved in writing the review and editing process. Phannathat Tanthanapanyakorn (PT) played a key role in conceptualization, formal analysis, resources, and validation. PT also contributed to methodology development and the writing–review and editing process. Nonlapan Khantikulanon (NK) was involved in data curation, formal analysis, investigation, resources, and supervision. Chaninan Praserttai (CP) contributed to the conceptualization, data curation, formal analysis, investigation, methodology development, project administration, supervision, visualization, and writing the original draft. CP was also involved in the writing–review & editing process. All authors have read and approved of the final manuscript.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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