Factors Affecting Stress among the Elderly in Bang Cha Keng Subdistrict Mueang Samut Songkhram District Samut Songkhram Province

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Abstract

This cross-sectional analytical study aimed to investigate factors affecting stress levels among elderly residents in Bang Jakreng Subdistrict, Mueang Samut Songkhram District, Samut Songkhram Province. The research utilized multi-stage random sampling to select 250 elderly participants aged 60 years and above from five villages. Data were collected using a three-part questionnaire comprising demographic information, health factors assessment, and the SPST-20 stress assessment tool. The study examined relationships between various factors and stress levels using chi-square analysis. Results showed that the majority of participants were female (69.20%), aged 60-69 years (49.69%), married (51.60%), and had monthly incomes below 5,000 baht (68.00%). Analysis revealed that 63.2% of participants experienced moderate stress levels, while 27.6% reported low stress, 7.2% high stress, and 2.0% severe stress. Four factors demonstrated significant relationships with stress levels ($p < .05$): age ($\chi^2 = 14.368$), occupation ($\chi^2 = 30.251$), physical health factors ($\chi^2 = 8.012$), and social and environmental health factors ($\chi^2 = 14.695$). Physical health factors showed moderate levels (M=2.64, SD=0.49), while both social-environmental and mental-emotional health factors showed low levels. These findings provide valuable insights for developing targeted interventions and support systems for elderly stress management in the community.

Keywords: Elderly, Stress factors, Physical health, Social environment, Mental health, Aging society

1. Introduction

Stress is defined as the body's response reaction involving physical, mental, cognitive, and behavioral aspects to both external and internal stimuli. These stimuli may include people, situations, environments, or thoughts, which individuals perceive as pressure. When experiencing stress, people become alert and energized to manage various situations (Department of Mental Health, 2019). Stress is a mental health issue that commonly occurs among the general population. It is an emotional state or feeling that arises when individuals face various problems and may cause physical harm, disrupting the balance of both body and mind. When stressed, individuals exhibit stress responses that lead to changes in various

aspects, including physical, mental, emotional, and behavioral dimensions (Srichan Pornjirasilp, 2023).

Currently, many countries worldwide are rapidly transitioning into aging societies. The World Health Organization (WHO) has established that when a country's population aged 60 and above reaches 10% of the total population, it is considered a full-fledged aging society. In 2015, there were approximately 900 million elderly people worldwide, and this number is expected to double to about 2 billion by 2050 (World Health Organization WHO, 2017). As the global elderly population increases, their health problems also rise proportionally. WHO reports that common health issues among the elderly include chronic non-communicable diseases, stress, depression, forgetfulness, and dementia (World Health Organization WHO, 2015).

Mental health problems among the elderly are secondary only to various chronic diseases. Globally, about 17.4% of elderly people experience mental health issues, with 7% suffering from depression, 5% from forgetfulness, and 3.8% from anxiety disorders (World Health Organization WHO, 2017). The aging society trend is inevitable worldwide. The United Nations projects that the global population aged over 60 will reach 1.2 billion by 2025 and 2 billion by 2050, representing 20% of the world's total population.

In Thailand, as of 2020, the elderly population constituted 18.24% of the total population, with an annual growth rate of 3.6%, or approximately 400,000 people per year. According to the National Economic and Social Development Council's revised projections (2019), Thailand's elderly population is expected to reach 20.66% by 2023 and 28.55% by 2035. This continuous increase in the elderly population, coupled with decreasing working-age and newborn populations, significantly impacts Thailand's economic and social development (Thatchanat Phantara, 2565).

Thailand has entered the aging society phase with an elderly population of 16.50% (Foundation of Thai Gerontology Research and Development Institute, 2016). The elderly population continues to increase annually while birth rates decline. This demographic shift results in increased caregiving responsibilities for the elderly, who experience physical and mental decline, making them vulnerable to various complications such as chronic diseases, dementia, forgetfulness, and depression. Moreover, suicide rates among the elderly rank second highest after the working-age population, with 15% of successful suicides being attempted suicides. The top three causes of elderly suicide are relationships with close ones, chronic physical illnesses, and depression (Department of Mental Health, 2018).

Samut Songkhram Province is among Thailand's provinces experiencing an increase in elderly population, ranking fifth nationally with 22.25% elderly population. According to the 2019 elderly population survey, Bang Khonthi District had the highest percentage at 25.69%, followed by Amphawa District at 23.29%, and Mueang District at 18.73%. The province has 43,483 households with a total population of 121,369 (56,773 males and 64,596 females). The working-age population (19-59 years) comprises 56.37% (68,411 people), while those aged 60 and above represent 30.65% (37,201 people), indicating the province's transition into an aging society (Samut Songkhram Provincial Community Development Office, 2022).

From April 2009 to January 2012, stress levels among Thai people showed a gradually decreasing trend before beginning to rise again. The five main causes of stress identified were financial issues, family matters, social and community environment, physical health, and mental health. Common stress management methods included relaxation through watching

TV, movies, listening to music, singing, playing music, praying, religious activities, and cognitive adjustment through acceptance and maintaining a positive mindset. Stress can affect people of all ages and genders, particularly the elderly, and if unmanaged, can impact both physical and mental health (Worawan Jutha et al., 2012).

A comprehensive review of literature and related research reveals a complex interplay of factors that contribute to stress among the elderly population. The research indicates that physical factors play a significant role, encompassing personal characteristics, age-related physical changes, and various health conditions that come with advancing age. These physical changes often create challenges in daily living and can become a source of ongoing stress for elderly individuals.

The emotional and psychological dimension is equally important in understanding elderly stress. Research has shown that elderly individuals often face significant emotional challenges, particularly when dealing with the loss of loved ones – a common occurrence in this age group. Their level of life satisfaction becomes a crucial factor in their mental well-being, along with their sense of self-worth and ability to manage stress. These emotional factors are deeply interconnected and can significantly impact an elderly person's overall stress levels.

Social factors form another crucial dimension affecting elderly stress levels. Studies have demonstrated that the physical environment in which elderly individuals live, along with their relationships with family members and broader social connections, significantly influence their stress levels. The quality and frequency of social interactions, along with the support systems available to them, play vital roles in determining how well they cope with stress.

Research conducted by Angkawara Wongasant (2017) has particularly emphasized how these various factors interact and influence each other, creating a complex web of stressors that affect elderly individuals' mental health. Furthermore, studies by Nitikorn Phusuwan (2013) have identified that individuals in the 60-69 age group experience notably higher stress levels compared to other elderly age groups. This finding is particularly significant as it corresponds to the early phase of elderly life, marking the transition from active employment to retirement. During this period, many individuals struggle to adapt to their new life circumstances, leading to increased stress levels compared to those in other age groups. Studies show that most stressed elderly are in the 60-69 age group (Nitikorn Phusuwan, 2013), as these early elderly phase marks the transition from working life, making it challenging to adapt to current situations and resulting in higher stress levels compared to other age groups.

Therefore, the researcher is interested in studying factors affecting stress among the elderly in Bang Jakreng Subdistrict, Mueang Samut Songkhram District, Samut Songkhram Province. The findings from this study can be integrated into planning health promotion activities to improve the mental health of the elderly population.

1.1 Research Objective

(1) The study of personal factors in relation to stress levels among elderly residents in Bang Jakreng Subdistrict, Mueang Samut Songkhram District, Samut Songkhram Province.

(2) Study factors affecting stress among elderly residents in Bang Jakreng Subdistrict, Mueang Samut Songkhram District, Samut Songkhram Province.

2. Research Methodology

This study on factors affecting stress among elderly residents in Bang Jakreng Subdistrict, Mueang Samut Songkhram District, Samut Songkhram Province, employed a cross-sectional analytical study design.

Population and Sample

The target population consisted of 624 socially active and home-bound elderly individuals aged 60 years and above from five villages in Bang Jakreng Subdistrict: Village 1 (Raman Tawan Tok), Village 2 (Bang Jakreng), Village 3 (Klong Klang), Village 4 (Ban Chu Chi), and Village 5 (Raman Tawan Ok). The sample size was calculated using Krejcie and Morgan's formula with a 95% confidence level and 5% margin of error, yielding a sample of 250 participants. Multi-stage random sampling was conducted as follows:

1. Proportional stratified random sampling was used to distribute the sample across the five villages according to their elderly population sizes.

2. The calculated sample size of 250 was proportionally allocated among the five villages.

3. Simple random sampling was employed within each village using a lottery method from the elderly registry. If selected individuals did not meet the criteria, new selections were made.

Research Instruments

The questionnaire consisted of three parts:

Part 1: General Information

A checklist-style questionnaire covering six personal characteristics including gender, age, marital status, occupation, income, and underlying diseases.

Part 2: Health Factors divided into three domains:

- Physical Health Factors: 10 items addressing physical mobility and health issues

- Mental and Emotional Health Factors: 10 items covering anxiety and life satisfaction

- Social and Environmental Factors: 10 items regarding interpersonal relationships and economic impacts

This section used a 5-point Likert scale (highest, high, moderate, low, lowest). The scoring interpretation followed Best's (1977) approach, categorizing results into high, moderate, and low levels.

Part 3: Stress Level Assessment (SPST-20) developed by the Department of Mental Health, this 20-item instrument uses a 5-point rating scale: Level 1: No stress, Level 2: Mild stress, Level 3: Moderate stress, Level 4: High stress. Total scores were categorized into four levels: Low: 1-24 points, Moderate: 25-42 points, High: 43-62 points, Severe: 63 points and above.

Instrument Quality Assessment

The questionnaire underwent content validity review by three experts. A try-out was conducted with 40 socially active and home-bound elderly individuals from Mae Klong Subdistrict, sharing similar characteristics with the target population. Reliability was assessed using Cronbach's alpha coefficient, yielding an overall reliability of 0.76.

Data Analysis

Descriptive Statistics: Used to analyze personal characteristics through frequency, percentage, mean, standard deviation, maximum, and minimum values.

Inferential Statistics: Chi-square analysis was employed to examine relationships between independent and dependent variables, with a significance level of 0.05.

Ethical approval

This research was approved by the Research Ethics Committee of Suan Sunandha Rajabhat University (Certificate No. COA. 2-051/2024) on November 5, 2024. Participants were informed of the research objectives and given freedom to decide on participation. All data were kept confidential and destroyed after analysis and research publication.

Results

Analysis of personal demographic data among elderly residents in Bang Jakreng Subdistrict, Mueang Samut Songkhram District, Samut Songkhram Province revealed the following characteristics:

Gender distribution showed a majority of female participants (n=173, 69.20%), with male participants comprising the remainder (n=77, 30.80%). Age distribution indicated that the largest group was in the 60-69 years age range (n=124, 49.69%). Regarding marital status, the majority of participants were married (n=129, 51.60%).

Monthly income analysis showed that the majority of participants (n=170, 68.00%) had an income below 5,000 baht. Concerning underlying health conditions, the highest proportion of participants (n=96, 38.40%) reported other conditions including hyperlipidemia, enlarged prostate gland, and osteoarthritis. The second most common condition was hypertension (n=75, 30.40%), while 44 participants (17.60%) reported no underlying health conditions. Table 1.

Table 1 Demographic Characteristics of Survey Respondents (n=188)

Variables	N	%
Sex		
Man	151	33.30
Female	303	66.70
Age (years)		
60 - 69	124	49.60
70 – 80	99	39.60
80 years and above	27	10.80
Marital Status		
Single	58	23.20
Married	129	51.60

Variables	N	%
Divorced	5	2.00
Widowed	56	22.40
Others	2	0.80
Occupations		
Unemployed	114	45.60
General Worker	34	13.60
Merchant/Trader	53	21.20
Government Official	7	2.80
Fisherman	34	13.60
Others	8	3.20
Monthly Income (Baht)		
≤5,000	170	68.00
5,0000 – 10,000	63	25.20
10,001 – 15,000	11	4.40
≥ 15,001	6	2.40
Underlying Medical Conditions		
None	44	17.60
Heart Disease	7	2.80
Diabetes	27	10.80
Hypertension	75	30.00
Cancer	1	0.40
Others	96	38.40

The data analysis provides an overall summary of elderly health factors across three dimensions. Physical health showed moderate levels (M=2.64, SD=0.49), followed by social and environmental factors which showed low levels (M=1.67, SD=0.60), and mental and emotional health which also showed low levels (M=1.63, SD=0.58). Table 2.

Table 2 Health Factors

Factors	M	SD	Results
Physical Health Factors	2.60	0.49	Moderate
Mental and Emotional Health Factors	1.63	0.58	Low
Social and Environmental Health Factors	1.67	0.60	Low

The analysis of stress levels among elderly participants revealed varying degrees of psychological distress in the study population. The majority of elderly individuals, comprising 158 participants or 63.2% of the sample, experienced moderate levels of stress. Following this, a considerable portion of 69 participants (27.6%) reported low stress levels. A smaller group of 18 elderly individuals (7.2%) indicated high stress levels, while a minimal number of 5 participants (2.0%) reported experiencing severe stress. Across all stress categories, the overall mean stress score was 29.85 with a standard deviation of 8.76, indicating moderate variability in stress levels among the elderly population studied. Table 3.

Table 3 Overall Stress Levels using SPST-20 Scale

Stress Levels	N	%	M	SD
Low	69	27.6	29.85	8.76
Moderate	158	63.2		
High	18	7.2		
Severe	5	2.0		

The analysis of stress levels revealed significant relationships with four key factors ($p < .05$). Age emerged as a significant factor influencing stress levels ($\chi^2 = 14.368$, $p = 0.026$), as did occupational status ($\chi^2 = 30.251$, $p = 0.011$). Physical health factors were also found to have a meaningful relationship with stress experiences ($\chi^2 = 8.012$, $p = 0.046$). Additionally, social and environmental health factors demonstrated a significant association with stress levels ($\chi^2 = 14.695$, $p = 0.023$). Table 4.

Table 4 Analysis of Stress Levels and Various Factors Using Chi-Square Test

Variables	**χ^2**	**df**	**P-Value**	**Results**
Sex	1.854	3	0.603	Non relationship
Age	14.368	6	0.026*	Relationship
Marital Status	12.218	12	0.428	Non relationship
Occupations	30.251	15	0.011*	Relationship
Monthly Income	5.850	9	0.755	Non relationship
Underlying Medical Conditions	22.632	15	0.092	Non relationship
Physical Health Factors	8.012	3	0.046*	Relationship
Mental and Emotional Health Factors	6.033	6	0.420	Non relationship
Social and Environmental Health Factors	14.695	6	0.023*	Relationship

p-value < .05

Discussion of Research Findings

Based on the research hypotheses, this study revealed the following findings:

General Demographics (Age)

A significant relationship was found between age and stress levels among elderly residents in Bang Chakreng Subdistrict, Muang Samut Songkhram District, Samut Songkhram Province ($\chi^2 = 14.368$, p-value = 0.026). This finding aligns with Napatsawan Manopkawee's (2024) research, which found that age correlates with stress levels in elderly individuals. This correlation can be attributed to increasing fears about physical health deterioration as people age, which is consistent with the Wear and Tear Theory suggesting that frequently used organs are more susceptible to deterioration.

General Demographics (Occupation)

Occupation showed a significant relationship with stress levels among the elderly residents ($\chi^2 = 30.251$, p-value = 0.011). This finding corresponds with Manuchet Manotham's (2018) research, which demonstrated significantly different stress levels among elderly individuals

with different occupations (at 0.05 significance level). This may be because many elderly individuals must continue working due to insufficient savings and lack of family support for their livelihood.

Physical Health Factors

A significant relationship was found between physical health factors and stress levels (χ^2 = 8.012, p-value = 0.046). This finding aligns with Napatsawan Manopkawee's (2024) research, which found that physical health factors significantly correlate with stress levels in elderly individuals (at 0.05 significance level). This can be explained by the natural physical decline in elderly individuals, consistent with the Wear and Tear Theory, which describes aging as a natural process where frequently used organs deteriorate more rapidly with age. Therefore, it is natural for elderly individuals to experience health-related stress.

Social and Environmental Factors

The study found a significant relationship between social and environmental factors and stress levels (χ^2 = 14.695, p-value = 0.023). This aligns with Dutsadee Khawewong's (2020) research, which found that environmental factors significantly correlate with stress levels at 0.05 significance level. The study revealed that elderly individuals living in poor environmental conditions were 3.06 times more likely to experience stress compared to those living in good environmental conditions. It was observed that elderly individuals with moderate to high stress levels were more likely to live in poor environmental conditions compared to those with low stress levels. This finding is also consistent with Napatsawan Manopkawee's (2024) research, which found a significant relationship between environmental factors and stress levels in elderly individuals at 0.05 significance level. This correlation exists because elderly individuals prioritize housing security and safety, with many experiencing stresses when their living conditions lack stability and security. Social support helps mitigate the adverse impacts of difficult life situations and reduces the likelihood of depression. On the other hand, a lack of social support may increase the risk of depression (Sasikarn et al., 2023)

3. Conclusion

This research study investigated factors affecting stress levels among elderly residents in Bang Jakreng Subdistrict, Mueang Samut Songkhram District, Samut Songkhram Province. The study revealed several significant relationships between various factors and stress levels in the elderly population.

The findings demonstrated that age, occupation, physical health factors, and social and environmental factors had statistically significant relationships with stress levels among the elderly. Notably, the majority of participants (63.2%) experienced moderate stress levels, while 27.6% reported low stress levels, 7.2% reported high stress levels, and 2.0% experienced severe stress.

Age was found to be significantly correlated with stress levels, particularly due to increasing concerns about physical health deterioration as individuals age. This finding aligns with the Wear and Tear Theory, highlighting the natural progression of physical decline in elderly individuals.

Occupation emerged as another significant factor, with different occupational statuses showing varying stress levels. This relationship was particularly evident among elderly individuals who needed to continue working due to financial constraints and lack of family support.

Physical health factors showed a significant correlation with stress levels, reflecting the natural aging process and its associated physical decline. This finding emphasizes the importance of addressing physical health concerns in stress management strategies for the elderly population.

Social and environmental factors also demonstrated a significant relationship with stress levels, with those living in poor environmental conditions experiencing higher stress levels. This highlights the crucial role of housing security and environmental stability in elderly well-being.

These findings contribute valuable insights for healthcare providers, policymakers, and community organizations in developing targeted interventions and support systems for elderly stress management. Future health promotion activities and mental health services should consider these multiple factors when designing programs for the elderly population in this region.

Further research could explore specific intervention strategies targeting these identified factors to help reduce stress levels among the elderly population and improve their overall quality of life.

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