Journal of Public Health and Development
Vol.18 No.3 September-December 2020

ORIGINAL ARTICLE

# Factors influencing the quality of life among sub-urban older adults in southern part of Thailand

Wipawee Jingjit[1], Narucha Komolsuradej[1], Kittisak Chumalee[1]

[1]Department of Family and Preventive Medicine, Faculty of Medicine, Prince of Songkla University, Songkhla, Thailand

***Corresponding author:*** *Narucha Komolsuradej* ***E-mail****: narucha.ko@psu.ac.th*

*Received: 5 May 2020*
*Revised: 8 July 2020*
*Accepted: 10 July 2020*
*Available online: September 2020*

**ABSTRACT**

Society around the world is ageing. With the increasing number of elderly people, emphasis on their quality of life cannot be overlooked. This cross-sectional descriptive study aimed to determine factors influencing the quality of life among sub-urban older adults in the Khu Tao community of Hat Yai district, in Songkhla province. Participants comprised 324 older adults whose aged at least 60 years old. Data collection was performed from October to December 2019. Participants completed questionnaires covering sociodemographic characteristics, including the abbreviated Thai version of the World Health Organization Quality of Life measurement tool (WHOQOL-BREF-THAI), the short version Depression Screening questionnaires (2Q and 9Q), and the Barthel Index of Activities of Daily Living. The demographic data was analyzed to describe characteristics of the samples and multiple logistic regression analysis was performed to evaluate protective factors associated with quality of life among older adults. The finding revealed the quality of life among participants was good for 28.4%, medium for 71.6% and none had a poor quality of life. Statistically significant factors associated with quality of life included having sufficient income ($OR_{adj}$ = 0.39, 95% CI = 0.18-0.87, p-value = 0.021) and participation in childcare ($OR_{adj}$ = 0.28, 95% CI (0.12-0.64), p-value = 0.003). If the government and community organizations create projects which help older adults earn their own income after retirement, and encourage them to participate in family activities, it could result in senior citizens having a better quality of life.

**Key words:** older adult, quality of life, community

## INTRODUCTION

The world's population is becoming an ageing society. The world's population was 7.55 billion in 2017, about 12.7% of whom were older adults. While growth rate of other age groups in the population was decline over the previous 10 years (2007 to 2017), there was a rise in the growth rate of older adults in the population. The world's population increased from 6.609 to 7.55 billion, a rate

of rate 1.4% / year. However, the elderly population (aged at least 60 years old) grew from 611 to 962 million, increasing at a rate of 5.8%/year, almost 4 times the growth rate for the population as a whole[1]. Thailand is also becoming an ageing society. According to a survey of the Thai populations in 2018 by the Ministry of Social Development and Human Security, the number of older adults was 16.06%. It predicted that by 2030, Thailand would become an ageing society, with older adults reaching 20% of the total population. In Songkhla province, the proportion of older adults was 14.72% in 2018.[2]

Older adults experience changes in their physical, mental and social condition. Physical changes may affect older adults in both visible and invisible dimensions of their life. Moreover, psychological and emotional changes frequently found in older adults can result in less happiness, which may be due to physical degeneration, illness, changed social status and loss of people close to them[3]. Reviewed literature suggests that there are several factors affecting quality of life for older adults, including age, gender, education, income, physical health, the ability to do routine activities, mental health status, and depression disorders.[4-7]

A review of work about the quality of life among older adults in Thailand[8] reported that most studies in Thailand were quantitative research, using the World Health Organization Quality of Life measurement tool -Brief- Thai (WHOQOL-BREF- THAI), or the Short Form Health Survey-36 (SF-36). Findings revealed that the quality of life of most older Thai adults was at a medium level, except in Bangkok and Chiang Mai provinces. These quantitative studies indicated that older Thai adults may need assistance to assure their quality of life, and that related care givers should be aware of guidelines to improve older adults' quality of life from medium to a higher level[8]. Some studies in Thailand found that age, marital status, educational background, occupation, health status, income, social participation, and depressive disorder were related to the quality of life of the older adults.[9-12]

Factors influencing sub- urban communities of older adults in the southern part of Thailand are not clear. It is also of interest to study the quality of life and related factors among older adults in the Khu Tao Community of Hat Yai District in Songkhla province because this community includes a variety of different religions, social activities and occupations[14]. The result of this study will be of advantage to other sub- urban communities for developing the quality life among older adults.

## MATERIALS AND METHODS

***Study design and setting:***

This cross- sectional study was conducted in Khu Tao Community, Hat Yai District, Songkhla Province. This community was chosen because it is a sub-urban community which has lifestyle and cultural diversity within the population.

***Sample size calculation and sampling technique:***

The sample size was calculated using Krejcie & Morgan formula with a 95% confidence level. The population of older adults in Khu Tao sub-district used to select the sample from was 1,880 persons and the proportion with a medium quality of life (p = 1.516) was similar to previous studies conducted among older adults in the southern border provinces[9], with the Chi-square degree of freedom equal to one.

The cluster sampling method was used to select a proportion of the populations in the villages of Khu Tao Community. Fractional numbers were rounded up. The total sample size was 324 persons.

Ethical approval, sought from the Faculty of Medicine, Prince of Songkla University, was granted on 7th October 2019 (REC62-147-9-4).

***Participants:***

Older adults who were at least 60 years old and living in the Khu Tao Community, Hat Yai District, Songkhla Province were contacted. Participants were a proportion of the populations in 10 villages, selected using the cluster sampling method. The total number of participants was 324 persons. Those who agreed to participate were asked to sign an informed consent document.

***Inclusion criteria:***

Participants were aged at least 60 years old, able to communicate in Thai language**,** and agreed to participate in the research

**Exclusion criteria:**

Those who were bed– ridden or unable to stand to perform weight measurement, thus unable to complete data measurement (body weight), and those who were unwilling to participate in the study

***Data collection****:*

Data collection was done from October to December 2019. All participants provided data by answering questions, after giving informed consent. Researchers collected data from participants in face to face interviews.

***Study tools and outcome measurement:***

The questionnaires used for data collection in this study included 79 items. The interviewing process took 30 minutes and was divided into 4 parts as follows.

**Part 1:** Baseline personal characteristics including gender, age, occupation, underlying health issues, marital status, religion, education, debt, sufficiency of income, residence, workplace, number of family members, being taken care of by others, attendance at community activities, participation in religious activities, participation in childcare, body mass index, drug use, smoking history, alcohol consumption, history of other narcotic use, dental condition, appropriate level of exercise, availability of potable water for consumption, safety, and accessibility to healthcare services, telephone and internet.

**Part 2:** The abbreviated Thai version of the World Health Organization Quality of Life measurement tool (WHOQOL-BREF-THAI) [16]

The WHOQOL- BREF- THAI questionnaire consists of 26 items, including 24 items in four domains ( physical, psychological, social, and environmental) , one item for general quality of life, and one item for health-related quality of life. There are seven items in the physical domain, six items in the psychological domain, three items in the social domain, and eight items in the environmental domain. The Thai version of the WHOQOL- BREF contains the 26 original items. The participants were required to rate their health- related quality of life (HRQOL) in relation to the previous two weeks. The item scores ranged from 1 to 5, with a higher score indicating a better HRQOL. Because the numbers of items were different for each domain, the domain scores were calculated by multiplying the average score of all items in a domain by 4. Thus, the domain scores have the same range, from 4 to 20.

Quality of Life scores from each domain were interpreted as poor (a score of 26 to 60), medium (61 to 95) or good (96-130 scores). [15] The study reliability, based on Cronbach' s alpha coefficient, was 0.8406 and the validity was 0.6515. The internal consistency and correlation coefficient was 0.90[16-17]. The questionnaire

used in this study, comprised of four domains to comprehensively evaluate quality of life, is also used in most studies of older adults' quality of life in Thailand.[9-13]

**Part 3:** The short version of Depression Screening questionnaires (2Q and 9Q) [18]

The process starts with the 2Q screening form with 2 items. If both questions were answered affirmatively the participants were further evaluated using the 9Q form, which had 9 items. The results were interpreted and broken into 4 groups: those with very low symptoms of depression or none at all, and those with low, moderate, or high levels of symptoms of depression disorder. Depression was assessed using the 2Q and 9Q format because the 9-Question Depression Rating Scale - revised for Thai Central Dialect has good criterion related validity. The optimum cut-off point of 9Q is 7 and above, with high sensitivity and specificity. It could be used in primary health care centers for surveillance of depressive disorders in Thailand.[19]

**Part 4:** The Barthel Index of Activities of Daily Living[20]

The Barthel Index of Activities of Daily living consists of 10 questions. The score was interpreted into 4 groups comprising; Complete Dependency, Highly Dependent, Moderately Dependent, and Independent. The data was used to evaluate the association of dependency with quality of life.

***Data management:***

Data was recorded from the questionnaires using EpiData Program version 3.1. The double entry principle was applied to ensure accuracy.

***Data analysis:***

The data was analyzed using R program, and presented in text and table format following the steps below.

1. Baseline characteristics of the participants were analyzed using descriptive statistics. Categorical data is presented using percentages (%) and continuous data is presented using the mean ± S.D. or median (IQR) depending on the distribution of data.
2. Quality of life was analyzed by frequency distribution and percentage.
3. Univariate analysis for associations of independent variables with adherence level were analyzed using the Chi-Square test for categorical variables and Rank Sum test for continuous variables. Significant factors obtained from univariated analysis were entered into a multiple logistic regression model for control of potential confounding effects. P-value was set at less than 0.05 for statistical significance.

## RESULTS

A total of 324 older adults participated in the study. The majority of participants were female (67%). Their age range was 60 to 99 years old (median age: 68, IQR: 64, 75). Most participants were found to have the underlying disease hypertension (72%). Their religious affiliations were Buddhist (56.2%) and Muslim (43.8%). Just over half were married or living with a partner (54.3%). Most had completed elementary school education (77.5%). At the time, just over half were unemployed (54.6%). The most common occupation before the age of 60 years old was merchant (39.2%). Regarding the participants' economic status, most did not have any outstanding debt (75.9%) and the majority had sufficient income for their expenses (65.1%). Most their owned their residences (92.6%) and also a workplace (75%). The median family size was 5 members. Most participants were being taken care of by their children or relatives, both in daily living and at times of illness. Most participated in community activities and/or religious activities (84.6%) and

participation in childcare was high (98.5%). Most participants were non- smokers (72.5%) and non-drinkers (92%). Just under half had at least 20 remaining teeth, sufficient for ease of food consumption (48.5%). Most exercised at least 3 days a week, 30 minutes per session. The participants lived in a safe residence or community, where medical services and facilities, public utilities and telephones were accessible to them. They were capable of using electronic devices to access the internet. (Table1)

After analysis of these factors in pairs, the results reveal that many factors influence the quality of life of older adults at a statistically significant level (p-value < 0.05). They include gender, age, chronic disease, level of education, occupation, income sufficiency, participation in childcare, smoking history, had at least 20 remaining teeth for ease of food consumption, and signs of depression.

The overall score for the quality of life from the WHOQOL- BREF- THAI questionnaire of older adults living in Khu Tao Sub-district reveals that 28.4% of them had a good quality of life, 71.6% had medium quality of life and 0% had a poor quality of life. In detail, poor quality of life was found to be a result of physical health for 3.4, a result of mental health problems for 0%, because of their relationship with the society for 18.8%, and a result of environmental issues for 0.6% of those surveyed. Some participants had poor quality of life in some aspects of their lives, but their total quality of life score was below the cut off point for poor overall quality of life. In this study, no one had an overall poor quality of life. (Table2)

Table 3. examined the statistically significant correlated factors for good quality of life among older adults. They were having sufficient income ($OR_{adj}$ = 0.39: 95% confidence interval (CI) 0.18-0.87) and participation in childcare ($OR_{adj}$ = 0.28: 95% CI 0.12-0.64).

**Table 1** Baseline personal characteristics data and bivariate analysis of association between factors and quality of life in older adults

| Factor | Overall n(%) (N=324) | Quality of Life | | p-value |
|---|---|---|---|---|
| | | Medium n(%) (N=232) | Good n(%) (N=92) | |
| **Gender** | | | | 0.017* |
| Female | 217(67) | 165 (71.1) | 52 (56.5) | |
| **Age median (IQR)** | 68 (64,75) | 69 (65,76) | 67(63,70) | 0.004† |
| **Underlying disease** | | | | 0.002* |
| Yes | 182 (56.2) | 143 (61.6) | 39 (42.4) | |
| **BMI** | | | | >0.05* |
| 18.5-23.0 | 111 (34.3) | 75 (32.3) | 36 (39.1) | |
| < 18.5 | 22 (6.8) | 18 (7.8) | 4 (4.3) | |

| Factor | Overall n(%) (N=324) | Quality of Life | | p-value |
|---|---|---|---|---|
| | | Medium n(%) (N=232) | Good n(%) (N=92) | |
| 23.0-25.0 | 68 (21) | 42 (18.1) | 26 (28.3) | |
| 25.01-30.0 | 99 (30.6) | 78 (33.6) | 21 (22.8) | |
| 30.01 and higher | 24 (7.4) | 19 (8.2) | 5 (5.4) | |
| **Education** | | | | 0.001‡ |
| None | 44 (13.6) | 39 (16.8) | 5 (5.4) | |
| Elementary school | 251 (77.5) | 176 (75.9) | 75 (81.5) | |
| Junior high school | 14 (4.3) | 6 (2.6) | 8 (8.7) | |
| Senior high school or equal | 11 (3.4) | 10 (4.3) | 1 (1.1) | |
| HVC/Diploma | 2 (0.6) | 1 (0.4) | 1 (1.1) | |
| Bachelor's Degree | 2 (0.6) | 0 (0) | 2 (2.2) | |
| **Current occupation** | | | | 0.018* |
| Agriculturalist | 59 (18.2) | 41 (17.7) | 18 (19.6) | |
| Employee | 14 (4.3) | 6 (2.6) | 8 (8.7) | |
| Merchant | 53 (16.4) | 33 (14.2) | 20 (21.7) | |
| Unemployed | 177 (54.6) | 138 (59.5) | 39 (42.4) | |
| Fisherman | 21 (6.5) | 14 (6) | 7 (7.6) | |
| **Previous occupation before the age of 60 years** | | | | 0.033‡ |
| Agriculturalist | 75 (23.1) | 55 (23.7) | 20 (21.7) | |
| Employee | 29 (9) | 21 (9.1) | 8 (8.7) | |
| Merchant | 127 (39.2) | 89 (38.4) | 38 (41.3) | |
| Government officer | 7 (2.2) | 1 (0.4) | 6 (6.5) | |
| Other | 4 (1.2) | 3 (1.3) | 1 (1.1) | |
| Unemployed | 42 (13) | 35 (15.1) | 7 (7.6) | |
| Fisherman | 40 (12.3) | 28 (12.1) | 12 (13) | |
| **Sufficient income** | | | | 0.003* |
| Yes | 211 (65.1) | 139 (59.9) | 72 (78.3) | |
| **Participation in childcare** | | | | 0.003* |
| Yes | 235 (72.5) | 157 (67.7) | 78 (84.8) | |

| Factor | Overall n(%) (N=324) | Quality of Life | | |
|---|---|---|---|---|
| | | Medium n(%) (N=232) | Good n(%) (N=92) | p-value |
| **Smoking** | | | | 0.008* |
| Yes | 35 (10.8) | 26 (11.2) | 9 (9.8) | |
| Never smoked | 261 (80.6) | 193 (83.2) | 68 (73.9) | |
| Did smoke but not anymore | 28 (8.6) | 13 (5.6) | 15 (16.3) | |
| **2Q 9Q (symptoms of depression)** | | | | 0.016* |
| Normal | 301 (92.9) | 210 (90.5) | 91 (98.9) | |
| Mild and higher | 23 (7.1) | 22 (9.5) | 1 (1.1) | |
| **Number of remaining teeth more than 20** | | | | 0.003* |
| Yes | 157 (48.5) | 100 (43.1) | 57 (62) | |
| **Barthel ADL** Independence | 324 (100) | 232 (100) | 92 (100) | >0.05* |

** Chi-square, † Ranksum test, ‡ Fisher's exact*

**Table 2** Quality of life of older adults living in Khu Tao Sub-district

| Quality of life | Poor n (%) | Medium n (%) | Good n (%) |
|---|---|---|---|
| Physical health | 11 (3.4) | 244 (75.3) | 69 (21.3) |
| Mental health | 0 (0) | 156 (48.1) | 168 (51.9) |
| Relationship with the society | 61 (18.8) | 233 (71.9) | 30 (9.3) |
| Environmental issues | 2 (0.6) | 209 (64.5) | 113 (34.9) |
| **Overall quality of life n (%)** | **0 (0)** | **232 (71.6)** | **92 (28.4)** |

**Table 3** Factors that influence the quality of life; the result of conducting multiple logistic regression analysis with quality of life-related factors

| Factors | crude.OR.95.CI. | P-value (crude OR) | adj.OR.95.CI. | P-value (adj.OR) |
|---|---|---|---|---|
| **Sufficient income (Yes)** | 0.42 (0.24,0.73) | 0.017 | 0.39 (0.18,0.87) | 0.021 |
| **Participation in childcare (Yes)** | 0.38 (0.2,0.71) | 0.002 | 0.28 (0.12,0.64) | 0.003 |

The result was adjusted for covariate of age, gender, underlying disease, current occupation, sufficiency of income, participation in taking care of children, smoking habits, symptoms of depression, and having more than 20 remaining teeth for ease of food consumption.

## DISCUSSION

To reveal correlated factors associated with quality of life among sub-urban older adults, multiple logistic regression analysis was used. This study found correlated factors, including sufficiency of income and participation in childcare. They showed that sufficient income was an important factor for older adults to feel secure in their daily lives. However, some elderly people were in debt and older adults in Khu Tao have low incomes (median of income was 2000 baht per month). Some only have income from government grants. If older adults feel they have sufficient income for their expenses, it is related to a higher quality of life[21].

The findings of this study were similar to a study in Brazil performed by Michaell et al, which found that the level of income did affect the older adults' quality of life[4] because they have internal capacity to adjust their resources for life in retirement.[4]

Participation in childcare reflects older adult interaction with their families. This factor allows them to feel important, reduces loneliness, and makes them feel valuable to others.[5] Most of the elderly persons participated in childcare as they were part of an extended family. Some of them were retirement or unemployed so they enough time to participate in family matters. This finding approximates the study of Wawwhanjua S., which found that relationships within the family is a factor that influences older adults' quality of life.[22]

However, from multiple logistic regression analysis it was found that many factors in this study were unrelated to older adults' quality of life, which differed from the results of previous studies conducted in Thailand. They include participation in community activities, participation in religious activities, gender, age, marital status, level of education, chronic disease, drinking behaviour, and symptoms of depression. It is possibly due to differences in geographical and demographical characteristics. In Khu Tao Sub- district, there is larger proportion of Muslims than in the population of Thailand as a whole (43.8% Muslim for Khu Tao compared with 5.4% for all of Thailand)[14,24]. For Muslims participation in religious activities and not drinking alcoholic beverages are the in keeping with their religious belief. Thus, because it is their normal cultural behaviour, it was found to have no correlation on their quality of life. Some factors may not be related to quality of life in this study because of a difference in baseline characteristics of participants with other studies.

Symptoms of depression are another important factor indication of quality of life among older adults in previous studies because depression negatively affects quality of life regardless of physical health[6,23]. However, it was unrelated in this study because most of the people in this community have interaction with others during religious and/ or community activities. It is reflected in the 81.2% finding of medium to good level of relationship with society domain of WHOQOL- BREF- THAI, which may reduce incidence of depression, represented with depression symptoms were found in 7.1% of individuals in the community and some participants had mild symptoms of depression which was higher than others.

This research was a cross-sectional descriptive study that aimed to study the quality of life of older adults living in Khu Tao Sub-district and factors that affected their quality of life. The samples were selected using the cluster sampling method, in order to gather thorough samples from every village in the Khu Tao sub-district to represent characteristics of the population.

The strengths of this study were using questionnaires that were valid and correlated to the research objectives, and the data analysis process of the research. The researchers collected data using the double entry technique to improve the validity of the data and to reduce error. They analyzed the data under the research advisor's guidance. The researchers also used multiple logistic regression analysis to find correlation among factors and to eliminate any potential confounding bias.

There was some limitation to this study in that we collected data by interviewing participants. There was potential for errors to occur during the process because the interviews used several questionnaires, and some of the items required older adults to recall information from their memories, which has potential for information and recall bias.

## RECOMMENDATION

There are two recommendations from this study. First, based on this study, income sufficiency and participation in childcare are factors that correlate with a better quality of life. Therefore, all the relevant parties, including government agencies, families, and the community should emphasize supporting older adults' incomes, relationships with their families. They would experience less depression along with having a better quality of life. Second, further study should focus on various depression severity among older adults in the South of Thailand to determine whether symptoms of depression affect the quality of life in older adults.

## CONCLUSION

This research study reveals that the overall quality of life of most older adults living in Khu Tao Sub-district in Hat-Yai district was at a medium level, which accounted for 71.6 percent of participants. Quality of life-related factors include sufficiency of income and participation in childcare correlated with a higher quality of life.

## ACKNOWLEDGEMENTS

This research was supported by Faculty of Medicine, Prince of Songkla University. The researchers would like to sincerely thank all participants and Khu Tao Sub-district Municipality for their great cooperation. We would also like to thank Napakkawat Buathong, Ph.D. and Siwaluk Srikrajang, PT. for their helpful comments on the manuscript.

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