Predictors of quality of life of the rural older adults in Northern Thailand

Katekaew Seangpraw
School of Medicine, University of Phayao, Phayao, Thailand

Nop T. Ratanasiripong
School of Nursing,
California State University – Dominguez Hills, Carson, California, USA, and

Paul Ratanasiripong
California State University – Long Beach, California, USA

Abstract

Purpose – The purpose of this paper to explore socio-demographic factors related to the quality of life (QoL) among older adults in the rural area of Thailand.

Design/methodology/approach – This cross-sectional study examined socio-demographic factor that may predict the QoL among 470 older adults who lived in a rural area of Northern Thailand. The study questionnaire consisted of four parts, including socio-demographic data, perceptions of the health status, family relationship and QoL (WHOQOL-OLD). Spearman's ρ or Pearson's product moment correlation coefficients were determine the factors associated with the QoL. Stepwise multiple regressions were carried out to describe predictors of the QoL.

Findings – Majority of the participants (71 percent) were between 60 and 79 years old. Three-quarters of participants had primary school educational level. Most (74 percent) were married and no longer work (72 percent). Most (87 percent) had a moderate level of the QoL in all six domains. Six predictors of QoL include age, gender, education, current employment, health status perception and family relationship. These factors could significantly predict the QoL of the older adults by 30 percent.

Originality/value – Public health officers should collaborate with community partners and relevant stakeholders to increase the QoL of older adults in the rural area through activities which promote health status perception and family relationship.

Keywords Quality of life, Older adults, Rural society, Thailand

Paper type Research paper

Introduction

Globally, there are 841m older adults (aged 60 years or older) with this number predicted to double by 2050[1]. In Thailand too, the aging population is increasing rapidly. In 2015, there were over 10.7m older adults, approximately 15 percent of the total population[2]. This percentage of Thailand's older adult population will likely be at least 30 percent of the total Thai population by 2035[2].

The increase in the elderly population continuously impacts the national economy, resources on health care and society as a whole[1]. As individuals, older adults will face a

decline in physical health, mental health, social activities and quality of life (QoL). As older adults age, they will likely have a higher chance of encountering significant health concerns such as hearing impairment, vision impairment, memory loss, arthritis, osteoporosis, hypertension, heart disease and diabetes. They will also be more susceptible to infectious diseases (i.e. influenza, pneumococcal disease)[3, 4]. Furthermore, while older adults may gain more wisdom, their learning processes may be slower[4]. They may also be struggling with the loss of income, increased medical care costs and the loss of significant others[5].

QoL is one of the indicators of a healthy life. As defined by the World Health Organization, a person's QoL is "an individual's perception of life in the context of the cultural system and the values in which they live, perceive themselves, expectations, standards, and concerns"[6]. It is a multidimensional assessment of an individual's ability in relation to their physical, mental, social assets and can convey the overall well-being of life as a whole[7].

Studies have been conducted to examine the QoL among the older adult population in both developed and developing countries. A study conducted among 911 older adults in the USA showed that, on average, each subject had 2.5 chronic conditions and received health care two to nine times annually. Some dimensions of the QoL were associated with depression, memory problems and activities of daily living[8]. Moreover, in cases where older adults do not have a good family relationship, their QoL may be impacted since family members provide significant support to older adults in the form of caregiving during periods of physical sickness, providing emotional support, helping older adults to solve problems when required and staying close to older adults so that they will feel less lonely[9, 10].

In a study conducted in Iran, overall, the older adults had an acceptable QoL in both genders. The total score of QoL was related to health conditions (i.e. hearing/vision impairment, cardiovascular disease, respiratory disease and gastrointestinal diseases)[11]. In a Thai national study, 55 percent of older adults reported that their health was not good and only 52 percent had undergone a general physical check-up in the past 12 months[2]. However, the study mainly emphasized the demographic and social characteristics, leaving the QoL and health aspects unanswered.

Phayao province in the Northern Part of Thailand is mostly comprised of an Eastern Lanna ethnic group population who speak a unique northern dialect. The elderly proportion in Phayao has increased from 7.4 percent in 1992 to 15.3 percent in 2015[12]. The percentage of dependent older adults also increased from 7.4 percent in 2011 to 18.6 percent in 2012[12]. The majority of older adults in Phayao have limited or no formal education and most work in the agricultural fields[12], which is a contributing factor to their lack of preparation for aging and physical deterioration. Currently, there is very limited data on the QoL among this population in Northern Thailand. One study in 2012 found that over two-thirds of the older adults living in Phayao enjoyed a fair level of QoL. The study reported that the predictors of the QoL included income, activity during the day, alcohol consumption and present illness[13]. However, the study did not examine the extent to which family relationships and the perceptions of health status influenced the QoL among older adults. Therefore, this study aimed to assess socio-demographic factors, perceptions of the health status and family relationships which may predict the QoL among older adults in the rural areas of Thailand.

Methods
Participants
There are 15 sub-districts with 4,891 seniors living in the Muang district of Phayao province[14]. These sub-districts are in the rural area located ~30 km from Muang district, Phayao. Ban Tum and Ban Tom sub-districts were chosen as the target population. The sample was selected using the two-stage cluster sampling method (Figure 1). The appropriate sample size for estimating the proportion of the population was calculated with 95 percent of reliability, the QoL of seniors
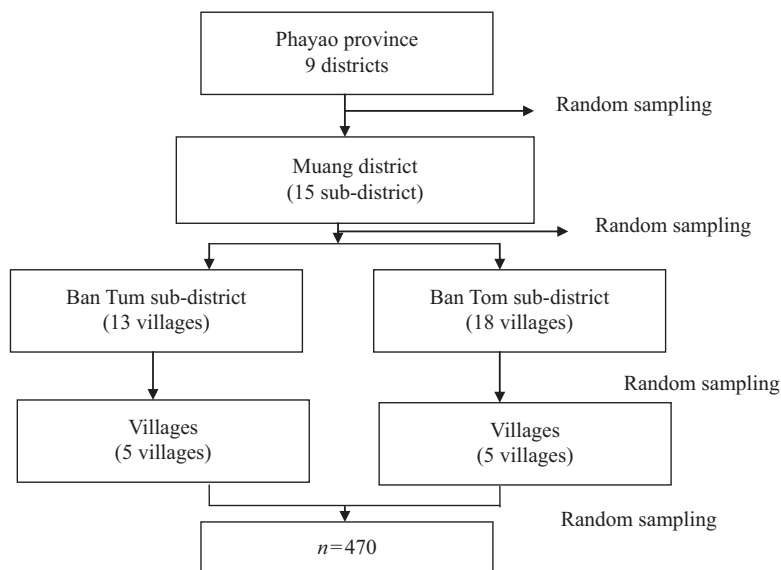
Figure 1.
A diagram of the
cluster sampling

at 17.2 percent[15] and accepted value of error for 3.42 percent of older adults. The sample size calculated by formula sampling[16] was 427 older adults:

$$n = \frac{\text{N}p(1-p)Z_{1-a/2}^2}{d^2(N-1)+p(1-p)Z_{1-a/2}^2},$$

$$n = \frac{4,891 \times 0.172(1-0.172)1.96^2}{0.0342^2(4,891-1)+0.172(1-0.172)1.96^2}$$

$$n = 427,$$

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

In addition, per the calculation formula, the sampling group was increased by 10 percent in order to obtain the required number of participants and to cover incomplete data, making a total sample size of 470 older adults.

The inclusion criteria included older adults who were at least 60 years old, lived in the chosen Muang District for more than six months, were able to speak Thai, and voluntarily participated in this study. The exclusion criteria included older adults who had recognition difficulties and/or other disabilities such as dementia, psychosis, intellectual disability, blindness and deafness.

Measurement

The study questionnaire was comprised of four parts. Part I contained socio-demographic items. Part II consisted of 15 items regarding each participant's perceptions of their health status. This part was adapted from the self-esteem and health conception of the elderly community in the area including three-dimensions; clinical health perception with the following question; "You have always understood your illness," functional health perception assessed by the following question; "You understand your health and immunity," and adaptive health perception with the following question; "You are prepared to cope with any illness that

may happen in the future"[17, 18]. The participants rated each item from 1 to 5. We divided the level using the applicable criteria based on cut point[17] score range as 15–75 (15–50 points = low, 51–62 points = moderate and 63–75 points = high). Part III contained 14 items asking participants to rate their relationship with their family. This part was adapted from family relationship questionnaires that were locally contextualized[17]. The original family relationship scale contained three items; in this study five items were used. We modified the Likert's type of responses from 3 levels to 5 levels. The base cut point[18, 19] score range was from 14 to 70 (14–47 points = need improvement, 48–58 points = moderate and 59–70 points = good). Part IV consisted of 24 items including questions for the older adults about their QoL. This part was adapted from the QoL questionnaire created by the WHO (WHO-QOL-Old)[20, 21]. The questionnaire was adjusted to meet the context of the rural community. The questionnaire was divided into six domains: sensory abilities, autonomy, past/present/future activities, social participation, death and dying and intimacy. Participants rated each item from 1 to 5. The possible score range was 24–120 ($\leqslant$72 points = low QoL, 73–95 points = moderate QoL and 96–120 points = good QoL).

The questionnaire was examined for its content validity by three qualified experts (a researcher specialized in health behaviors from the Thai Ministry of Health, a professor specialized in aging and public health, and a professor specialized in aging and nursing). The questionnaire was revised and piloted with 30 older adults who lived in a similar environment, but not from the chosen two sub-districts. Cronbach's α coefficients were utilized to check the internal reliability of the scales. The reliability coefficients remain consistent: perception of health = 0.78, family relations = 0.80 and QoL = 0.79.

Before the data collection, 15 university students (majoring in community health) and ten village health volunteers who were registered by the Ministry of Public Health were trained to be the research assistants. They were taught the research study protocol, consent process and how to conduct a structured interview. The research assistants went to each sub-district and invited the potential subjects to participate in the survey. If the older adults were interested in participating, the research assistant would read an informed consent to the older adults in their local language. If the older adults agreed to participate, they would sign the informed consent. Then the research assistant would interview each participant by reading the questionnaire items and ask the participant to rate each item. There were 470 older adults who participated in the study.

Ethical consideration
The current study was approved by the ethics committee of the Research Institute UP-HEC University of Phayao (2/034/58).

Data analysis
The data were analyzed using the Statistical Package for the Social Sciences version 20.0 (License from University of Phayao). Descriptive statistics were used to examine the socio-demographic and variable characteristics of the participants. Depending on the level of measurement of the variables, Spearman's ρ or Pearson's Product Moment correlation coefficients were used to determine the factors associated with the QoL of participants. Stepwise multiple regression was also applied to identify the predictors of the QoL. A p-value was set to consider as statistically significant at $p < 0.05$.

Results
The average age of all participants was 68.8 (SD = 7.1, Range = 60–91) with most of them (71.1 percent) between 60 and 79 years old. Slightly more than half of the participants were female (52.1 percent). Approximately, three-quarters of participants had not completed further studies and were educated up to primary school level. Most were married (74 percent)

and no longer worked (71.7 percent). More than half of the participants (59.1 percent) had a monthly income of less than 4,000 Thai Baht (equivalent to $130). Most of them (91.9 percent) had participated in community activities. Many of the participants (58.5 percent) reported that they had at least one health condition including hypertension (49.5 percent), stress (16.3 percent), diabetes (14.2 percent), muscle pain (13.0 percent) and gout (7.0 percent) (Table I).

Variables of interest

Among the 470 older adults, the mean score of perceived health status was 49.9 (SD $=$ 6.5, Min. $=$ 40, Max. $=$ 68). Only 13.5 percent of older adults had a high perception of their health condition and habits. Approximately, a quarter (23.4 percent) had high family relationship scores while the rest had low to moderate family relationship scores. The mean score of QoL among older adults was 87.4 (SD $=$ 5.8, Min. $=$ 70, Max. $=$ 108). Most of them (87.2 percent) had a moderate level of QoL (Table II).

When examining the correlations of the variables of interest and QoL, there were significantly positive associations among gender, marital status, education, current employment, health condition, community participation, health status perception, family relationships and the QoL. Significantly, age was negatively associated with the QoL of the participants ($p < 0.001$) (Table III).

When the significant factors were entered into the stepwise multiple regression model, six predictors (age, gender, current employment, education, health status perception and family relationship) were found to be the factors which had the power to predict the QoL of rural older adults in this study ($R^2 = 0.357$, R^2change $= 0.302$, p-value<0.05) (Table IV).

Socio-demographic	n	%
Age (years)		
60–79	334	71.1
⩾80	136	28.9
Gender		
Male	225	47.9
Female	245	52.1
Marital status		
Single/divorced/separated	122	26.0
Married	348	74.0
Education		
No	315	67.0
Yes	155	33.0
Currently employment		
No	337	71.7
Yes	133	28.3
Income per month (Baht)		
⩽4,000	278	59.1
⩾4,001	192	40.9
Community participation		
No	38	8.1
Yes	432	91.9
Health condition		
Without chronic disease	195	41.5
With chronic disease	275	58.5

Table I.
Socio-demographic characteristics among older adults

Variables	No.	%
Health status perception		
Low level (15–50)	110	23.3
Moderate level (51–62)	297	63.2
High level (63–75)	63	13.5
Mean = 54.23, SD = 7.114		
Family relationship		
Low level (14–47)	53	11.3
Moderate level (48–58)	307	65.3
High level (59–70)	110	23.4
Mean = 53.16, SD = 6.399		
Quality of life		
Low level (⩽72)	21	4.5
Moderate level (73–95)	410	87.2
High level (96–120)	39	8.3
Mean = 87.42, SD = 5.863		

Table II.
Number and
percentage of the level
of the quality of life of
rural elderly

Discussion

The mean age of participants in this study was 68.8. Age is one of the indicators determining one's self-care ability[22]. Usually, the self-care ability will gradually be higher as a child grows up and it will be decreased when the person enters the aging process. When the physical and cognitive functions decline, the older adults will start to depend on others to help with their daily and social activities which, in turn, may decrease the overall QoL. In term of QoL as measured by WHO-QOL Old, the study found that as the older adults get older, their average QoL is lowered. More than half of older people experienced QoL at the low level, followed by the high level, and the moderate level. These results are similar to previous studies[15, 23] which reported that older adults had a lower QoL and higher levels of dependency compared to younger adults. In addition, as they begin to increasingly depend on others, they may feel that they become a burden to the family and society as well[24]. Health care professionals and the community should work hand-in-hand to encourage older adults to share their life experiences and valuable skills with the future generation which, in turn, may increase the older adults' self-esteem.

Gender is another predictor of QoL in older adults. Compared to males, female older adults seem to have a better QoL. One study in Thailand reported a significant association between gender and QoL in the elderly[11]. One reason why female older adults scored higher on QoL could be that the female older adults may have higher perceived social support from family and friends[25]. Helping older adults to stay connected with family, friends, and the community could increase their QoL. Public health agencies could set up programs and outreach activities to encourage older adults, especially males, to participate in community events.

This study also found that current employment and education can predict the QoL in older adults. The result is similar to previous studies[26, 27]. When older adults are retired or unemployed, they likely have less income to maintain their standards of living. They may have to borrow money from different sources or depend on their children for financial assistance[26]. Government welfare of 600 Thai Baht per month (less than $20) does not meet the minimum basic needs of older adults who do not have a retirement pension. National welfare for older adults should be seriously discussed at the government's policy level. Creating suitable jobs for older adults who can still work may be needed along with connecting the elderly who can no longer work to family or community resources. In term of educational level, older adults with a higher level of education had more advantages.

Variables	1	2	3	4	5	6	7	8	9	10
1. Age	1.000									
2. Gender	0.012	1.000								
3. Marital Status	−0.009	0.053	1.000							
4. Education	−0.149**	−0.047	0.056	1.000						
5. Current Employment	0.032	−0.098**	0.004	0.072	1.000					
6. Community Participation	0.060	0.013	0.066	−0.059	0.004	1.000				
7. Health Condition	0.009	−0.016	0.017	−0.107	−0.004	0.074	1.000			
8. Health Status Perception	0.053	0.044	−0.005	−0.053	−0.044	0.042	0.123**	1.000		
9. Family Relationships	−0.019	−0.042	−0.017	0.040	0.009	0.022	0.011	0.069	1.000	
10. Quality of life	−0.125**	0.112**	0.099**	0.120**	0.121**	0.124**	0.112**	0.114**	0.147**	1.000

Notes: Variables included in the model: gender (male = 0, female = 1); marital status (single/divorce/separated = 0, marriage = 1); education (no = 0, yes = 1); current employment (no = 0, yes = 1); health condition (with chronic disease = 0, without chronic disease = 1), community participation (no = 0, yes = 1); age, health status perception, family relationships, and quality of life = continuous data. *$p < 0.05$; **$p < 0.01$

Table III.
Correlation
coefficients and
relationship between
predictors; it shows
by Correlation matrix

They may have better living conditions, less chance of being exposed to risk factors of diseases, less labor-intensive work, a good network of friends, and a higher sense of self-efficacy[27]. While advancing the formal education level may not be a goal for older adults, however, less formal and enjoyable learning experiences may be helpful. Creative short-term workshops or training (i.e. painting, basketry, herbal gardening, and massage) may also provide additional income for older adults.

The relationship with family is another key predictor of the QoL in older adults. A good relationship with family enhances the mental health of older adults, whilst older adults with good family relationship have a higher QoL since they may be able to depend on the family more and can express their feelings or concerns with significant others. The family is usually a source of love, warmth, and emotional support for the elderly. Health care personnel should encourage the family and elderly to participate in recreational activities or family vacations together in order to enhance the elderly's QoL[28, 29].

The last predictor of QoL in this study is health status perception. Health status perception is the idea and understanding of the process involved in performing a self-health assessment[18, 30]. More than half the participants had health status perceptions at a moderate level followed by low and high levels. This is probably because the majority of older adults were in the age range of 60–79 years old. While they may still be able to perform basic daily activities, their physical health deteriorates as their age increases[30]. This is consistent with a previous study which found that older adults who were able to take care of themselves and participate in community activities had a good perception of their health status. This conforms to the concept that the perception of good health is related to the seriousness of health-promoting behaviors[22].

In China, a population-based health-related QoL study was measured in 2010. The findings showed that as older adults aged, they had a higher number of physically unhealthy days (over 2.7 days/month). Among those over 75 years of age, there were reports of poorer health at almost 5 times higher than 18–24 year-olds[31]. Furthermore, with increased age, physical deterioration increases too. However, if the older adults perceive their health status in a more positive light, they may stay motivated to take good care of themselves and live longer – leading to a good QoL[23]. Advising older adults to have a regular medical check-up at a local hospital may help increase the healthy days since some diseases may be prevented through self-care and primary prevention intervention. In order to increase positive perception of health status, a project such as "move it or lose it" (the less you move physically, the more you lose in health) may be implemented to teach and encourage older adults to keep moving (e.g. dancing, gardening, walking, and stretching). This will not only increase their physical movement but also increase their self-esteem in that they are still able to do various activities in life.

Income, community participation and health condition are not significant predictors of the QoL among older adults. However, these factors are still significantly related to QoL indicating

Variables	R^2	R^2_{change}	B	SE (B)	β	p-value
(Constant)	0.357	0.302	84.297	1.951		
Self-esteem			0.622	0.395	0.116	<0.006
Family relations			4.381	1.543	0.127	<0.004
Education			1.397	0.553	0.112	<0.012
Occupation			1.437	0.580	0.110	<0.013
Gender			1.319	0.521	0.112	<0.017
Age			−1.734	0.550	−0.138	<0.002

Notes: Variables included in the model: gender (male = 0, female = 1); education (no = 0, yes = 1); current employment (no = 0, yes = 1); age, health status perception, family relationships, and quality of life = continuous data

Table IV.
Stepwise multiple
regression analysis
between factors and
quality of life
among elderly

the importance of these factors among older adults in term of social support[22, 30]. Public health organizations should influence policy makers to actively move forward with the government plan to increase financial aid (social welfare, allowance and welfare card) for low income elderly in order to alleviate the cost of living. Also, participating in community activities may help older adults increase their self-worth because they will be accepted by people in the community leading to increased life satisfaction and QoL[25]. This is consistent with a previous study which found that elderly people with chronic illness, who can take care of themselves, can motivate good behaviors of self-care practice. Moreover, they will remain in good health and do not need to rely on others[29].

This study had some limitations. This study was conducted among rural Thai older adults in one Thai province. It may not be generalizable to all rural older adults in other developing provinces. Also, health or disease condition data were self-reported. The older adults might have been diagnosed by a health care professional or self-diagnosed. Lastly, social environment and behaviors might influence how the older adults answered some questions such as the use of alcohol/tobacco, QoL, health status perceptions and family relationship.

Conclusions

The findings from this study contribute to the knowledge regarding the QoL amongst the older adult population. It found that self-esteem and family relationships are important for improving the QoL of the elderly. This study provided clear recommendations to increase the QoL of older adults by setting up health promotion programs to increase their physical and mental activities, the source of income, community involvement, family relationship and perception of health status.

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Corresponding author
Katekaew Seangpraw can be contacted at: eungkaew@gmail.com