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Subjective well-being and related factors among community-dwelling elderly in Udon Thani Province, Thailand

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Abstract

The elderly are vulnerable groups due to physiological, psychological and social change. Subjective well-being (SWB) is a protective factor for elderly health which varies in the community context. This study aims to assess SWB and related factors among the community-dwelling elderly of Udon Thani Province, Thailand. A descriptive study was conducted. The sample size calculation required 719 elders. The tool was a questionnaire that was composed of 3 parts: general information, health status, and WHO SWB index. Descriptive statistics, 95% confidence interval (CI), Chi-squared, crude odds ratio, adjusted odds ratio (AOR) and multiple logistic regression were applied for data analysis. The response rate was 97.91%, while the majority of respondents were female, aged 60-69 years old. The mean score for SWB was 3.30 (SD 0.81) from the highest score of 5. The proportion of the high level of SWB was 83.7% (95%CI: 80.93, 86.40). After controlling for other related factors, marital status (AOR 2.62; 95%CI 1.65, 4.16), participating in an elderly club (AOR 1.84; 95%CI 1.13, 2.99), having regular exercise (AOR 1.99; 95%CI 1.22, 3.29) and having no suspected of dementia (AOR 6.00; 95%CI 1.06, 33.85) were statistically related to SWB. This study provides practical implications associated with a better understanding of SWB among the elderly, and to promote a high level of SWB among the elderly. It is important to encourage the single elderly to participate in an elderly club and continuing exercise. Also, dementia prevention among the elderly is highly recommended.

Keywords: Subjective well-being, Elderly, Related factors

1. Introduction

People are living longer and the number of elderly people has increased. Globally, the number of elderly will increase from 516 million people in 2009 to 1.53 billion people in 2050. Also, the life expectancy at birth of global elders stood at 68.6 years old in 2015 and will be 76.2 years old in 2050 [1]. In Thailand, the number of elderly is 11.3 million people or 16.7% of the population, and this will increase to 19 million people in 2034, which is 29% of the population. Life expectancy at birth was 70.6 years old between 2005 - 2010 and was 71.7 years old between 2010-2015. Therefore, the health care system should be preparing to preserve the health of the elderly according to the goals of SWB.

The elderly are vulnerable groups due to physiological, psychological and social changes that make the elderly become at a high-risk of diseases and illnesses that affect their quality of life and well-being. Including the aging process, physical changes increase the risk of chronic diseases. Top diseases that cause the deaths of elderly around the world include cardiovascular diseases, lung diseases, cancers and cerebral strokes [1], while hypertension/dyslipidemia/hypercholesterolemia, diabetes mellitus, gout/rheumatoid arthritis (chronic pain at knee, back, and

cervical), heart disease, and paralysis. Such risk factors cause of the Thai elderly to be a dependent group [2] and in 2014, there were 8.1% of all elderly who had dementia [3]. Due to retirement and life stress events that affect the elderly coping with the psychosocial changes [4]. In addition, the result of declining fertility affects the family size and independence ratio. The number of elderly living with a spouse has increased and a few caregivers when they are ill [5].

The goal for elderly care is to maintain of physical health, mental health, social health, and participation in social activities according to their needs, desires, and capacities. Health care services have had to provide them with adequate protection, security, and care when they require assistance in order to enhance their quality of life and SWB [6]. SWB might be a protective factor for health, reducing the risk of chronic physical illness, stress, and depression, and promoting longevity [7]. The concept of SWB involves a positive cognition of the individual's current situation, and the experiences of an appropriate balance of emotions, both positive and negative with variations in the community-dwelling context [8]. A person who has a high level of life satisfaction and experiences a greater positive effect would be deemed to have a high level of SWB [9].

For the current study, Udon Thani province was selected. It is located in the northeast of Thailand where the number of the elderly is expected to increase by more than 20% by 2025 [10]. Health problems amongst the elderly included a high proportion of chronic diseases such as hypertension and diabetes mellitus [10]. In addition, a previous study in Udon Thani province found 3.5% of the elderly need long term care which requires the burden of care and affects the elderly quality of life and SWB. SWB depends on the elderly perception and community context, therefore, this study aimed to assess SWB and related factors among the community-dwelling elderly of Udon Thani Province, Thailand. The anticipated outcome will be beneficial for SWB improvement intervention and promotion in Udon Thani Province and other similar communities.

2. Materials and methods

2.1 Study design

A descriptive study was conducted among community-dwelling elderly. The participants were 838 elders who were recruited from elders aged 60 and over, living in the area of responsibility of, and registered at Na Kwang Health Promotion Hospital. Exclusion criteria were being elderly with severe health problems such as disabilities, hearing problems, serious illness causing paralysis, or mental illness which makes them unable to communicate with others. The sample size was calculated based on simple random sampling to estimate the proportions, based on a previous study of well-being and related factors among the Khon Kaen Pensioners and Elders Association members, Thailand [6], which showed a high SWB proportion of 0.79. The WINPEPI sample size calculation [11] was applied for Confidence level = 95%, Maximum acceptable difference = 0.015, Expected loss of subjects = 10% and therefore the sample size required was 719 elders. A flow chart of study enrolment as shown in figure 1 below:

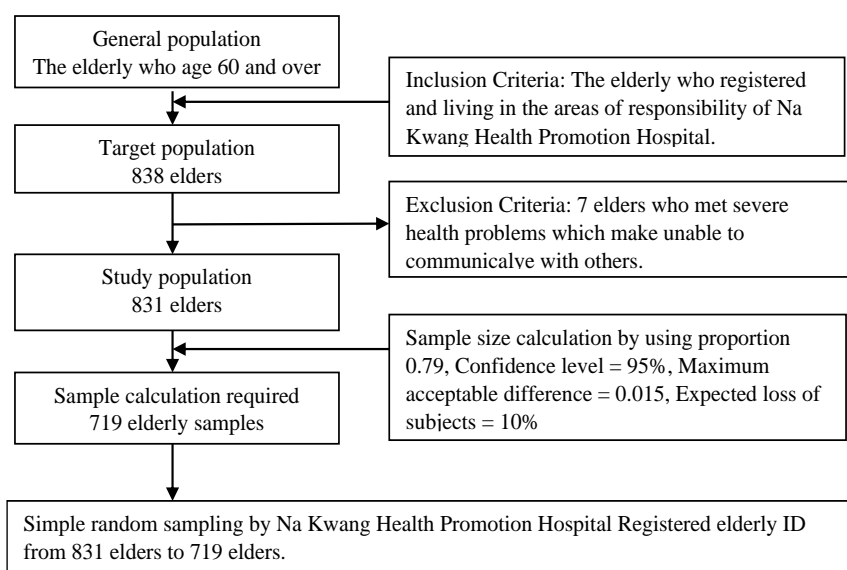


Figure 1 Flow chart of study enrollment.

2.2 Questionnaires

The tool was a questionnaire composed of 3 parts: general information, health status and WHO SWB index, for which the sensitivity, and specificity were 0.86, and 0.81 respectively [12]. For the part of health status, the validity was reviewed and approved by three experts in gerontology. This part included the Barthel Activities of Daily Living (ADLs), for which the Cronbach's alpha coefficient was 0.84 [13], the Thai Geriatric Depression Scale-TGDS-15 for which sensitivity, specificity, and overall accuracy were 0.92, 0.83 and 0.87 [14] and the *Thai Mental State Examination (TMSE)* for which sensitivity was 84.9 and specificity was 92.0 [15].

In the part of the WHO SWB index [12], this tool comprising 5 questions was translated into Thai, for which the Cronbach's alpha coefficient was 0.88 [6]. The item response ranged from a 0 to a 5 score. The sum total score was 25 by item response, and the highest mean score was 5, with a higher score meaning having a higher SWB. A low level of SWB refers to a sum score lower than 13, while a high level of SWB refers to a sum score of 13 and over [6].

2.3 Data Analysis and Ethical Approval

Data was collected through an interview, for which interviewers were trained to administer the questionnaire with a standardized procedure. The data abstraction and interview forms were checked for completeness, and then the data double-entry technique was used to ensure the accuracy of the data entry process. Descriptive statistics such as frequency, percentage, mean, SD and 95%CI were used to describe the characteristics of the elderly. Inferential statistics such as chi-squared and Crude Odds ratio were used for bivariate analysis. Factors found to be significantly associated with SWB (p-value <0.05) in bivariate analysis were considered for inclusion in the multivariate analysis. In multivariate analysis, multiple logistic regression analysis was used to identify factors related to SWB among the elderly.

Prior to starting data collection, this study was reviewed and approved by the Ethics Committee for Research on Human Subjects (HE 59142) in Human Research for Social/Anthropological Studies, Faculty of Medicine, Khon Kaen University, Thailand.

3. Results

The response rate was 97.91% (704/719). Table 1 demonstrates the characteristics of the sample elderly. Most of the sample elderly were female, young-old (age 60-69 years old), had completed primary school, were Buddhist, married and had friends to communicate with on a regular basis. Moreover, most sample elderly were still working, but could not travel on their own. The majority lived in a family with one to four members and had had a fall experience in the previous 3 months. In addition, half of the sample participated in an elderly club. In the section on health status, 24.3% of the elderly have hypertension and 15.6% have diabetes as diagnosed by medical doctors. In addition, almost 80% have regular exercise, 65.9% have an annual health check-up, and 97.6% are independent. This present study also found that elderly people suspected of having dementia accounted for 11.6%, whereas 3% were at high risk of having depression.

Table 1 Characteristics of sample elderly (n=704).

Variables	Number (percent)
Gender	
Male	294 (41.8)
Female	410 (58.2)
Age (years old)	
60-69 (the young-old)	436 (61.9)
Over 70 (the old-old)	268 (38.1)
Education	
Primary school	665 (94.5)
High school or higher	39 (5.5)
Religion	
Buddhist	703 (99.9)
Christian	1 (0.1)
Marital status	
Married	457 (64.9)
Single/Divorced/Separated	247 (35.1)
Still working	
Yes	471(66.9)
No	233(33.1)
Travelling on their own	
Yes	192(27.3)
No	512(72.7)

Variables	Number (percent)
Number of family members	
1-4	517(73.4)
5 and over	187(26.6)
Having close friends	
Yes	693 (98.4)
No	11 (1.6)
Participates in the elderly club	
Yes	357 (50.7)
No	347 (49.3)
Participates in religious activities	
Yes	355(50.4)
No	349(49.6)
Participates in handicraft/occupational group	
Yes	101(14.3)
No	603(85.7)
Regular exercise	
Yes	569 (80.8)
No	135 (19.2)
Annual health check-up	
Yes	464 (65.9)
Never	240 (34.1)
Fallen in past 3 months	
Yes	77(10.9)
No	627(89.1)
Hypertension	
Yes	171 (24.3)
No	533 (75.7)
Diabetes	
Yes	110 (15.6)
No	594 (84.4)
Depression	
Normal (Score 0-5)	692 (98.3)
Risk of having depression (Score 6-10)	12 (1.7)
Dementia	
Normal (Score 24-30)	695 (98.7)
Suspected of having dementia (Score 0-23)	9 (1.3)
Activities of daily living (ADL Index)	
independent group (Score ≥ 12)	687 (97.6)
partly dependent group (Score 5-11)	17 (2.4)

Table 2 presents the SWB among the community-dwelling elderly. The elderly had an SWB over the past two weeks mean score of 3.30 (SD 0.81, 95% CI: 3.24, 3.36). In addition, this study also found the proportion of high SWB stands at 83.7% (95%CI: 80.93, 86.40). When considering the details, it was observed that the top three points of well-being at the all-the-time level are “feeling cheerful and having a good mood”, “daily life is full of interesting things”, and “waking up with a feeling of freshness and peacefulness”, in that order. The point of well-being at the all-the-time level that people recognized least was “feeling bustling and energetic”.

Table 2 SWB among the community dwelling elderly.

SWB (Over the past 2 weeks)	All of the time (5) Number (%)	Most of the time (4) Number (%)	More than half of the time (3) Number (%)	Less than half of the time (2) Number (%)	Some of the time (1) Number (%)	At no time (0) Number (%)
1. I have felt cheerful and in good spirits	113 (16.1)	281 (39.9)	207 (29.4)	100 (14.2)	3 (0.4)	0
2. I have felt calm and relaxed	71 (10.1)	194 (27.6)	261 (37.1)	166 (23.6)	11 (1.6)	1 (0.1)
3. I have felt active and vigorous	64 (9.1)	143 (20.3)	274 (38.9)	178 (25.3)	43 (6.1)	2 (0.3)
4. I woke up feeling fresh and rested	95 (13.5)	221 (31.4)	264 (37.5)	114 (16.2)	8 (1.1)	2 (0.3)
5. My daily life has been filled with things that interest me	101 (14.3)	216 (30.4)	237 (33.7)	133 (18.9)	16 (2.3)	1 (0.1)
SWB	Mean score	3.30	SD	0.81	95%CI	3.24, 3.36
High level of SWB		N = 589	83.7	%	95%CI	80.93, 86.40
Low level of SWB		N = 115	16.3	%	95%CI	13.60, 19.07

Table 3 shows factors related to SWB among the community-dwelling elderly. Bivariate analysis revealed that the factors related to SWB among community-dwelling elderly were: age group (COR 2.09, 95% CI 1.39, 3.12), marital status (COR 5.29 95% CI 3.45, 8.10), still working (COR 1.71 95% CI 1.14, 2.57), traveling on their own

(COR 2.44 95% CI 1.41, 4.20), number of family members (COR 0.61 95% CI 0.37, 1.00), participating in an elderly club (COR 2.51 95% CI 1.64, 3.83), participating in religious activities (COR 2.06 95% CI 1.36, 3.12), participating in a handicraft/occupational group (COR 2.51 95% CI 1.18, 5.32), having regular exercise (COR 3.07 95% CI 1.98, 4.76), no suspected dementia (COR 19.02 95% CI 3.90, 92.79) and no risk of depression (COR 16.58 95% CI 4.42, 62.26).

Table 4 presents the multiple variables analysis results. Factors found to be significantly associated with SWB (p -value <0.05) in bivariate analysis were considered for inclusion in the multivariate analysis. After adjusting for potentially confounding factors, multiple logistic regression analysis found marital status (AOR 2.62 95% CI: 1.65, 4.16), participating in an elderly club (AOR 1.84 95% CI: 1.13, 2.99), having regular exercise (AOR 1.99 95% CI: 1.22, 3.29) and no suspected dementia (6.00 95% CI: 1.06, 33.85) were related to SWB among community-dwelling elderly with statistical significance.

Table 3 Bivariate analysis factors related to SWB among the community dwelling elderly.

Factors		SWB		Crude Odds Ratio	95% CI	p -value
		high	low			
Gender						
	Male	252 (85.7)	42 (14.3)	1.30	0.86, 1.97	0.213
	Female	337 (82.2)	73 (17.8)			
Age group						
	60-69 years old	382 (87.6)	54 (12.4)	2.09	1.39, 3.12	$<0.001^*$
	Over 70 years old	207 (77.2)	61 (22.8)			
Education						
	Primary school and under	555 (94.2)	110 (95.7)	0.74	0.28, 1.94	0.127
	Secondary school and over	34 (5.8)	5 (4.3)			
Marital status						
	Married	409 (89.5)	48 (10.5)	5.29	3.45, 8.10	$<0.001^*$
	Single, Widowed, Divorced, Separated	180 (72.9)	67 (27.1)			
Still working						
	Yes	406 (86.2)	65 (13.8)	1.71	1.14, 2.57	0.010*
	No	183 (78.5)	50 (21.5)			
Travelling on their own						
	Yes	175 (91.1)	17 (8.9)	2.44	1.41, 4.20	$<0.001^*$
	No	414 (80.9)	98 (19.1)			
Number of family members						
	1-4	424 (82.0)	93 (18.0)	0.61	0.37, 1.00	0.049*
	5 and over	165 (88.2)	22 (11.8)			
Participating in an elderly club						
	Yes	320 (89.6)	37 (10.4)	2.51	1.64, 3.83	$<0.001^*$
	No	269 (77.5)	78 (22.5)			
Participating in religious activities						
	Yes	314 (88.5)	41 (11.5)	2.06	1.36, 3.12	$<0.001^*$
	No	275 (78.8)	74 (21.2)			
Participating in handicraft/occupational group						
	Yes	93 (92.1)	8 (7.9)	2.51	1.18, 5.32	0.013*
	No	496 (82.3)	107 (17.7)			
Having close friends						
	Yes	581 (83.8)	112 (16.2)	1.95	0.51, 7.45	0.323
	No	8 (72.7)	3 (27.3)			
Regular exercise						
	Yes	496 (87.2)	73 (12.8)	3.07	1.98, 4.76	$<0.001^*$
	No	93 (68.9)	42 (31.1)			
Annual health check-up						
	Yes	397 (85.6)	67 (14.4)	1.48	0.98, 2.23	0.059
	No	192 (80.0)	48 (20.0)			
Fall in last 3 months						
	Yes	65 (84.4)	12 (15.6)	1.07	0.56, 2.04	0.850
	No	524 (83.6)	103 (16.4)			
Activities of Daily Living (ADL)						
	Dependent	12 (70.6)	5 (29.4)	0.46	0.16, 1.33	0.140
	Independent	577 (84.0)	110 (16.0)			
No suspected dementia						
	Yes	587 (84.5)	108 (15.5)	19.02	3.90, 92.79	$<0.001^*$
	No	2 (22.2)	7 (77.8)			
No risk of depression						
	Yes	586 (84.7)	106 (15.3)	16.58	4.42, 62.26	$<0.001^*$
	No	3 (25.0)	9 (75.0)			

*Statistically significant at $p < 0.05$.

Table 4 Factors related to SWB among the community dwelling elderly from multivariate analysis.

Variables		Adjusted Odds Ratio	95% CI	p-value
Age (years)	60-69/ 70 and over	1.42	0.88, 2.29	0.146
Marital status	married/single, widowed, divorced, separated	2.62	1.65, 4.16	<0.001*
Still working	Yes/no	0.96	0.59, 1.56	0.863
Travelling on their own	Yes/no	1.61	0.90, 2.88	0.108
Participating in elderly club	Yes/no	1.84	1.13, 2.99	0.015*
Participating in religious activities	Yes/no	1.49	0.91, 2.43	0.111
Participating in handicraft/occupational group	Yes/no	1.86	0.82, 4.26	0.139
Regular exercise	Yes/no	1.99	1.22, 3.29	0.006*
Family members	1-4/5 and over	0.85	0.49, 1.44	0.536
No suspected dementia	Yes/no	6.00	1.06, 3.85	0.042*
No risk of depression	Yes/no	4.26	0.92, 19.74	0.064

*Statistically significant at $p < 0.05$.

4. Discussion

The present study found that the elderly had characteristics similar to the elderly who live in community areas: the number of females was higher than males, finished primary school, age 60-69 years old and most of the sample elderly were Buddhist [16]. In addition, this present study found that the number of elderly that exercised regularly was higher than Kuhirunyaratn et al. reported [17]. The present study also found that the proportion of hypertension and diabetes was higher, and the proportions of depression and suspected dementia lower than the study of Sihapark et al. [16]. In the section of ADL, this present study found a high proportion of elderly who are independent, with a higher proportion than previous studies in Thailand [13, 16].

SWB is the current situation in which people's evaluations of their lives includes diverse concepts ranging from momentary moods to global judgments of life satisfaction, and from depression to delight [18]. This present study found that for SWB in the section on mental health, most of the elderly felt cheerful, had a good mood, were interested in things, and felt fresh and peaceful. However, in the section on physical health, the present study found a lower proportion feeling bustling and energetic due to the aging process tending to reduce physical fitness and resulting in difficulty in the normal functioning of the elderly [19]. To strengthen SWB, therefore, promoting functional fitness is needed to be able to undertake normal everyday activities. When scoring the proportion of high/low SWB this study's results were higher than Chasoongnoen and Kuhirunyaratn [6], due to most of the elderly sample being in the younger age group and the study setting being in rural areas. In the section of the younger age group, which refers to the elderly who retired early, they maintain high cognitive ability and have good physical functioning [20], feeling younger than one's actual age is related to higher levels of SWB when controlling for socio-demographic variables [20]. In the section on living area, the elderly who live in a rural part of Thailand received a higher SWB score than those who live in towns or urban areas, due to having the opportunity for community activities, such as social and religious activities, and a relationship with the community and family which affects the well-being of the elderly, especially in the area of life satisfaction [22].

The results found that marital status, participating in an elderly club, having regular exercise and no suspected dementia related to SWB. The group of the elderly who were married and were living with their spouse perceived a higher SWB level. This finding is confirmed by the study of Pinquart and Sorensen, which stated that older married adults enjoy higher SWB than their unmarried peers [21]. The influence of emotional support from role relationships (spouse, adult children and relatives) is based on social support [22] and interactional role theories [23]. In addition, peer support is also an important factor related to SWB when the elderly participate in an elderly club. This result is confirmed by Kuhirunyaratn et al. [23], who found that engaging in a community elderly club was related to a high value of perceived social support [24]. The elderly club activities provide social companionship, instrumental aids, as well as emotional support to the elderly; helping to release pressure, to reduce depressive feelings, and to buffer the harmful effects of stressful life events on health [25] and enhance the quality of life and SWB. The present study found that regular exercise was related to SWB, similarly to a study among older Chinese adults, which found that physical activity affects physical, psychological, mental and social elements of SWB and finally enhances the quality of life in the later years [26]. Physical exercise in the community-dwelling elderly can minimize the effect of declining strength and improve functional ability [27]. In addition, an increase in physical exercise is positively related to the improvement of depression status [27], health safety and the risks of developing major cardiovascular and metabolic diseases, obesity, falls, cognitive impairments, osteoporosis, and muscular weakness are decreased, increasing freshness and vigor [28].

The present study found no suspicion of dementia-related to high SWB, since dementia is a group of progressive brain disorders that results in multiple cognitive and behavioral impairments [29], which affect the daily life of the elderly, and eventually lead to a dependent status, which impacts SWB [33, 34]. In addition, Zankd and Leipold [30] also found participants with mild dementia reported less depressive symptoms and more life satisfaction than persons with more severe dementia. Thus, a prevention intervention is recommended to enhance the perception of high SWB for the elderly.

Due to the high response rate, this study provides practical implications for a better understanding of SWB among the elderly which can be applied to similar contexts. For SWB improvement among the elderly, the model chose the elderly who had no spouse as a target group and suggested participating in an elderly club, continuing exercise and dementia prevention for intervention in improving SWB among the elderly. However, there was some limitation of this study, due to the SWB being a subjective evaluation that relies on the elder's perception, mood, and attitude, which change over time. This present study also did not assess SWB among the frail elderly, who need care and much more focus on SWB improvement. In addition, to identify factors related to SWB, an analytical study is suggested. The authors also further suggest a qualitative study on SWB definition and factors relevant to a remote area.

5. Conclusion

The proportion of the high level of SWB was 83.7% (95% CI: 80.93, 86.40). When controlling other related factors, this study found marital status (AOR 2.62 95% CI: 1.65, 4.16), participating in an elderly club (AOR 1.84 95% CI: 1.13, 2.99), having regular exercise (AOR 1.99 95% CI: 1.22, 3.29) and having no suspected dementia (AOR 6.00 95% CI: 1.06, 33.85) were statistically related to SWB.

In sum, this study found that the elderly had perceived the SWB at a high level. However, to promote SWB among the elderly there should be a focus on the elderly who are living alone or living with no spouse and promote regular exercise, promote participation in elderly clubs and initiate a dementia prevention program.

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