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QUALITY OF LIFE AND FEAR OF FALLING AMONG AN AGING POPULATION IN SEMI RURAL, THAILAND

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Background: Thailand is the country where large numbers of old population are living in rural areas. Multiple factors are influencing the health of old people but falling is the biggest cause affecting their quality of life. This study explores the relationship between the quality of life, and fear of fall among aging people in the semi-rural, Thailand. **Methods**: A cross sectional study was conducted on 394 old aged individuals living in Nakornnayok Province. Participants were selected through simple random method (SRM) from village population list. Old people were interviewed by adapting World Health Organization quality of life instrument-older module (WHOQOL-OLD) to access the quality of life. Multiple logistic regression analysis was applied to identify factors associated with QOL. Results: Above half of respondents during this study were female, married, educated with age 70.45±6.99. Majority of aging had low income and were not enrolled for their health check-up at hospitals on regular basis. Over a half of them suffered from chronic diseases, and one third of them were using instrumental aids such as visual glasses, walker support, wheel chair and hearing aids etc. Majority, (70%) of the participants was living in safe houses but (34%) reported fall at least one time in past year. Mean of fear of fall score (FFS) was calculated (26.97±4.31) and mean of FFS during using public transportation was (9.8756±2.19467). Two third of aging population reported the moderate quality of life (QOL). Conclusions: Study has concluded that the QOL in aging people is related with household safety and confidence to use public transportation.

Keywords: Quality of Life, Fear of Fall, Aging and rural population.

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INTRODUCTION

Proportion of aged population has been increasing in Thailand. This vulnerable group of population needs special health care services, influencing economy of the country, especially for those living with disability. Fall is considered as a serious public health problem which results in disability and affects quality of life.[1] Serious health concerns due to fall among older population are injury, mortality and morbidity associated with restricted activity life, diminished self-confident and the quality of life.[2]

Quality of life can be defined as an individual perception and expectation of life that can be different in context and culture. However, studies has found the poor quality of life in Thais old population due to multiple factors like; regular drinking, lack of exercise, Diabetes Mellitus, Hypertension and other chronic diseases.[3] Public sectors in developing countries have mainly focused on communicable diseases and non-communicable diseases like; diabetes, coronary heart disease, and cancers. However, quality of life in older population remains as a neglected area in these settings. Even though, Thailand is ranked the second most aging populous country in Asia, but no policy exists for designing safe house for older population living in rural areas to prevent their frequent fall.[4]

This study is part of an on-going intervention research that explores the relationship between fear of fall and the quality of life among older population. Moreover, this information can be essential for health care workers, and policy makers, for planning and implementing intervention program to improve the quality of life among Thais aging in rural area by preventing fall.

MATERIAL AND METHODS

A cross-sectional study was conducted at Nakornnayok rural province of Thailand, which is located in the centre of Thailand, and 75 kilometers away from main capital Bangkok. The proportion formula for cross-sectional survey was used to determine the sample size (n). P, the proportion of aging population who have fear of falling, was assumed to be 0.50 to obtain the maximum sample size, with z=1.96 for a 95% confidence interval, α=5%. The *p*-value was taken to be significant at 0.05, and the SE is the standard error that predicts the difference estimated and true proportion by not more than 5%. The required sample size was 384 that were increased to 394 to allow for cluster effects.[5] Aging people were enrolled by simple random method from the village population list. The quality of life WHOQOL-OLD questionnaire was adapted and

pretested on 30 old people living another province of Thailand and was used to interview the old population by trained data collector.[6–8] Old peoples living in the study area at the time of data collection were included in this study. However, those having chronic diseases were excluded. Scoring on fear of falling statements were given as; 1 for no fear, 2 for moderate fear, and 3 for high fear. Accordingly, the scores were calculated out of total scoring on quality of life (89–120) in three groups; if score was 56–120 indicate high, 56–88 shows moderate and 24–55 means low quality of life. Descriptive statistics were used to characterize the sample and assess the quality of life score, fear of fall score due to household safety standards at their living places like stairs and slippery floor etc. Multivariate significance tests were carried out using multiple logistic regressions to explore the QOL and factors associated. Odd ratio, 95% Confident Interval, and pre-value were included in this study. Statistical significance was calculated by using 2-tailed tests, with $p<.05$ to control for type-1 error inflation. Analyses were performed by using SPSS 16.0. This study was approved by the Ethics Committee of Chulalongkorn University of Thailand. Also, written informed consent forms were obtained before the start an interview.

RESULTS

The mean age of respondents were 70.45 (SD=6.99), min-max age 60–95 years. Majority of them were female and 38.1% of them were male. More than half were married with 3 children (Mean±SD= 3.23±1.818) (Table-1). Most of participants attended primary school (71.1%), 15% of respondents were graduated and only few respondents never attended school (13.8%). About (78.2%) of them replied that they are current employee working as famers (50.3%), shop's owner (32.8%), temporary employee in the factory (17.2%), and other businesses (1.9%). Most of respondents replied their income was not enough, however, (47.88%) of them replied that they were satisfied with their income but 35.83% of them replied that they were unsatisfied with their income. Only a few respondents replied having enough income per month and only. About half (57.8%) of respondents were suffering from a chronic diseases such as diabetes, hypertension, dyslipidaemia, kidney diseases, and respiratory diseases.

Almost two third of the respondents (66.3%) replied that they are free from fall, only 33.7% had a least once fall history during their aging life. The most common place of fall was outdoors (83.5%), and 16.5% had a fall inside household. Regarding household safety score among the respondents, about three fourth of the aging household were safe (74.9%). About 75% respondents had low fall fearing score, and followed by moderate fear (23.6%), and then high fear (2.3%). Moreover, fear of fall in aging during travel in public transportation were low (60.7%), and followed by moderate fear (31.2%) and then high fear (8.1%) (Table-2).

Majority (66.5%) of aging population presented moderate QOL and 33.5% with high QOL. In addition, QOL score was devised into 6 facets. The first facet is the Sensory Ability (SAB), the finding shown that the majority of them had moderate QOL in SAB facet and followed by high QOL 20.6% and low QOL 13.7%. Autonomy (AUT), moderate QOL in this facet (61.4%) and followed with high QOL (36.8%) and low AUT (1.8%). About 50% of aging scored that they had high 49.5% and moderate 48.2% and 2.3% had low QOL in Social participation facet (SOP). Similar with past, present, and further activity facet (PPF), over a half (52.0%) of the respondents had moderate QOL, and 47.2% of them had high QOL, and last but not least 0.8% with low QOL. Moreover, intimacy facet (INT) also similar with those two facets above, aging in the study area presented they have high QOL 50.8%, moderate QOL 48.5%, and low QOL 0.8%. In death and dying facet (DAD) 38.1% of respondents had high QOL, and 35.5% had moderate QOL and 26.4% had low QOL (Table-3).

With Multiple Logistic Regression analysis, seven variables were added into the analysis. The study found that a factor associated with QOL was household safety and no fear of fall during travel in public transportation. The respondents who had less fear of fall during travel public transportation have higher quality of life over 6 folds, than those who had moderate and high fear of fall (OR=6.463, 95% CI=2.695–15.498, *p*-value 0.05). Household safety is a factor related with the QOL in aging, 2 times higher QOL than who had moderate household safety (OR=1.936, 95% CI=1.135–3.301, *p*-value=0.015). Thus, statistical finding presented for aging population who live with their family had higher QOL than aging who live alone two times (OR=2.049, 95% CI= 0.892–4.704, *p*-value=0.091). Instrumental aids using factor, this study found that it was not related with QOL (OR=0.800, 95% CI=0.470–1.361, *p*-value=0.410). Similarly with History of fall, fear of fall, and history of chronic diseases were not related with QOL (OR=1.272, 95% CI=0.756–2.143, *p*-value=0.365; OR=0.664, 95% CI=0.410-1.077, *p*-value=0.097; OR=1.264, 95% CI=0.695-2.299, *p*-value=0.442, respectively) (Table-4).

Table-1: Socio-demographic characteristics

Variables		n (%)
Age	Mean±SD 70.45±6.997	
	60–69	202 (51.3)
	70–79	155 (39.3)
	80 and over	37 (9.4)
Gender	Male	150 (38.1)
	Female	244 (61.9)
Marital status	Single	35 (8.9)
	Married	241 (61.2)
	Separated/Widow/Divorce	118 (29.9)
Number of Children	(Mean±SD) 3.23±1.818	
Family members	(Mean±SD) 3.30±1.847	
Living status	Alone	22 (5.6)
	Family	366 (92.9)
	couple	256 (69.9)
	Son	146 (40.7)
	Daughter	152 (41.5)
	Son/daughter in-law	105 (28.7)
	Grandchildren	156 (42.6)
	Relatives	11 (3.0)
	Missing data	6 (1.5)
Education	No education	53 (13.5)
	Primary school	280 (71.1)
	Secondary & higher	59 (15.0)
Working status	Unemployed	79 (20.1)
	Employed	308 (78.2)
	No answer	2 (1.7)
Physical check-up	In a past 1 year	267(68.1)
Older people suffered	Chronic diseases	226 (57.9)
Health problem	Taste impairment	347 (88.1)
	Walking impairment	343 (87.1)
	Memory impairment	340 (86.3)
	Movement impairment	338 (85.8)
	Insomnia	338 (85.8)
	Incontinence	333 (84.5)
	Visual impairment	229 (58.1)
	Hearing impairment	166 (42.1)

Table-2: Household safety and fear of fall among aging

	Variables	Number %
Household safety (n=391, 99.2%), not answer=3 (0.8%)	(Mean±SD=11.8670±1.81241)	
	No safety	96 (24.4%)
	Safe house	295 (74.9%)
Fall history (n=368 (93.4%), missing data =1 (0.3%), not answer =25 (6.3%)	No	244 (66.3%)
	Yes,	124 (33.7%)
Site of fall down (n=121, 30.7%)	Indoor	20 (16.5%)
	outdoor	101 (83.5%)
Fear of fall	(Mean±SD=26.9721±4.31363)	
	High fear	9 (2.3%)
	Moderate fear	93 (23.6%)
	Low fear	292 (74.1%)
Fear of fall score during using public transportation	(Man± SD=9.8756±2.19467)	
	High fear	32 (8.1%)
	Moderate fear	123 (31.2%)
	Low fear	239 (60.7%)

Table-3: **Quality of life and 6 facets among aging in the study area**.

QOL level	Low	Moderate	High
Total QOL	-	262 (66.5%)	132 (33.5%)
SAB	54 (13.7%)	259 (65.7%)	81 (20.6%)
AUT	7 (1.8%)	242 (61.4%)	145 (36.8%)
SOP	9 (2.3%)	190 (48.2%)	195 (49.5%)
PPF	-	205 (52.0%)	186 (47.2%)
DAD	104 (26.4%)	140 (35.5%)	150 (38.1%)
INT	3 (0.8%)	191 (48.5%)	200 (50.8%)

Table-4: Factors association with QOL among aging

Variables	OR (95% CI)	*p*-value
Stay with family	2.049 (0.892-4.704)	0.091
No instrument aids using	0.800 (0.470-1.361)	0.410
No history of fall	1.272 (0.756-2.143)	0.365
No history of chronic diseases	0.664 (0.410-1.077)	0.097
High score of household safety	1.936 (1.135-3.301)	0.015
No fear of fall	1.264 (0.695-2.299)	0.442
Low fear during using public transportation	6.463 (2.695-5.498)	<0.001

DISCUSSION

Within the population of this study, we found that two-third of aging population has reported moderate quality of life. Studies have supported our results and showed that the quality of life in aging is quite similar.[9] The WHOQOL-OLD consists of six interconnected components included sensory ability, autonomy, social participatory, past-present-further activity, death & dying, and intimacy facets, this study found DAD facet seem to reduce the total QOL, in this study regarding this facet 26% of aging people replied that they have low QOL. DAD was also found in the previous study to be influencing QOL in aging higher compared with other facet.[10,11] The next facet influencing the QOL is SAB facet, which was ranked second highest for low QOL score in this study. The health problems included taste impairment, walking impairment, memory impairment, movement impairment, insomnia, holding things problem, incontinence, visual impairment, hearing impairment; it was shown that almost all aging people in this study have reported that impairment. Not surprisingly, the impairment has been found influencing QOL in aging people in the previous studies.[12–16] Policy makers and family can support aging people by assisting them for daily activities at their living places. This might be related with the culture and context of community that influencing to their quality of life.

The second highest facet of the high QOL in aging people is the SOP facet, almost 50% of respondents replied that they have quality of social participation in their life. Study found that continues social participation produces positive health consequences having association with reducing mortality among aging people in the Japanese population.[17] Moreover, previous study found social participation and actives has improved life's of Thai aging population.[10] Not only physical improvement was found as a result of social participation, moreover, psychological well-being also improved. The family income and social participation is also related with flourishing aging in Thailand. This result proved that the social participation can improve the quality of life in aging.[15]

Finally, factors associated with good QOL, aging people who have safety household and confidences to travel in public transportation were found statistically significant. Household safety might refer to safe life and their families provide enough material support for aging life. Travel in public transportation remains a big challenge in aging people. Even fear of fall was high in aging but it may not be related with their quality of life.[18] As a result of fracture due to fall has influenced economic conditions of families with aged.[19] These results of the present study are consistent with previous findings.[20,21]

CONCLUSION

Study has concluded that the QOL in aging people is related with household safety and confident to use public transportation of aged person. A friendly-household and community safety for aging population should be constructed for to improve the quality of life in aging.

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AUTHOR'S CONTRIBUTION

KY conceived the study design. SP and JCS did the data analyses. RK and RS drafted the successive drafts of paper. RS conducted the critical review and added the intellectual content to the paper. All authors read and approved the final draft.

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