

Predictors of depression among older people living in rural areas of Thailand

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Abstract

Global population is ageing and Thailand has one of the fastest growing ageing populations in this region. Combined with this, depression has become a major mental health problem for older people. The objective of this paper is to examine the predictors of depression among rural older people of Thailand. This study has used information from the Study on Health and Social Support among Older Population living in Kanchanaburi Demographic Surveillance System (KDSS), Thailand in 2006. Depression was measured by a 12 item questionnaire of Thai validated Euro-D scale among 1001 respondents. The questions were on depression, pessimism, wishing to die, guilt, sleep disturbance, loss of interest, irritability, eating problems, fatigue, problem in concentration, lack of enjoyment, and tearfulness. Among the respondents 28.5% had depression. The results of logistic regression found that infirmity, disability and serious life events had significant effect on depression of the respondent. Those who had 4 or more infirmity, they were 2.08 times more likely to have depression compare to those who had no or only 1 infirmity. Disability was another strong predictor of the depression. It should be mentioned here that those who had medium disability, had the chance of depression 3.12 times more compare to those who had no disability. Serious life event was also a major factor for the respondents. Those who had 3 or more serious life events they had the depression 5.25 times more compare to those who had no serious life event. This study identified three major predictors of depression for older people in KDSS, Thailand. The finding will help to design specific prevention program to reduce the depression of older people living in the rural area of Thailand.

Introduction

Depression is a common mental health problem of older people and is associated with considerable morbidity. The prevalence of depression among older people who are living in the community ranges from 15 to 25 per cent, depending on population studied and the categories of disorder examined. Institutionalized elderly could have depression from 10 to 40 per cent with mild to moderate impairments and additional 5 to 10 per cent depression due to severe impairment¹. Depression in older people has been identified as a new public health problem in low and middle income countries including Thailand². Previous studies had identified multiple factors as predictors of depression in old age which varied with context. Increasing age is one of the important predictor for old age depression³⁻⁴. Females had higher proportion of depression compare to males⁵⁻⁷. The prevalence of depression was found to be significantly higher in the elderly who were single (never married), widowed, divorced or separated⁸⁻⁹.

Low education was associated with old age depression¹⁰⁻¹¹. Unemployment can give rise to reduced hope and financial problem, which in turn contribute to depression¹². Majority of the older people have one or more chronic conditions and many suffer from multiple physical disorders that restrict their activities¹³. Beside infirmity, disability is an important predictor for old age depression¹⁴. Death of spouse or financial problem is commonly experienced serious life events for older people¹⁵⁻¹⁶.

Both in absolute numbers and in proportion, the population aged 60 years and over have increased faster compare to overall population in Thailand. The older population shared of 5.5 per cent in 1980, about 9.5 per cent in 2000¹⁷⁻¹⁸, and will be about 14.4 per cent in 2020¹⁹. Figure 1 shows the population pyramid of Thailand in 1970, 1990, 2010 and 2030. These pyramids clearly showed how Thai population structure will be transformed from a young population to ageing population within 40 years.

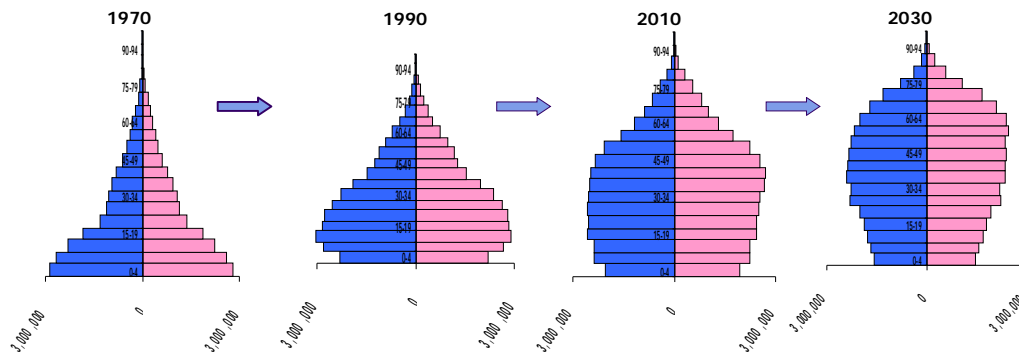


Figure 1: Population pyramid of Thailand from 1970-2030

Source: NSO, 1960-2000, Mahidol University Population Gazette, 2007

As fertility and mortality have decreased and people's life expectancy increased, there is growing concern over the mental health of older people in Thailand. Several studies were conducted on depression in Thailand. Various standardized and mostly validated measurement scales were used. Some studies validated the scales in Thai context, for example, EURO-D, Mini Mental State, Thai mental state examination²⁰⁻²². Other studies found that prevalence of depression varied among elderly people. For example the prevalence was 30.0 per cent among displaced adults after tsunami in Thailand, 29.2 per cent among population 45 and older in Chiang Mai province and 12.78 per cent among elderly living in the community²³⁻²⁵. Multiple predictors are responsible for depression at old age. Previous studies identified children's migration, psychological wellbeing of elderly, social support to elderly and living arrangement as important predictors²⁶⁻²⁹. But the information on important predictors of depression of older people in Thailand is still not sufficient.

The objective of this paper is to examine the predictors of depression among rural older people of Thailand. The findings will help to design the appropriate mental health programs for the elderly.

Materials and Methods

This study has used the information from the study on Health and Social Support among Older Population living in Kanchanaburi Demographic Surveillance System (KDSS), Thailand in 2006. The survey was conducted by Institute for Population and Social Research (IPSR), Mahidol University, Thailand in collaboration with Kings College, London, UK. Data were collected from November 2006 to January 2007. This study was approved by the ethics committee of the Mahidol University.

Dependent variable

Depression: Depression was measured by using a Thai version of the EURO-D scale questionnaire³⁰.

The EURO-D scale is a structured scale of depressive symptoms designed for detecting depression in older populations. It can be used as a self-administered tool. The questions were read out here. Thai mental health professionals, including two non English-speaking locally trained providers, considered that it covered symptoms recognized locally as common in psychological disorders in older adults. A team of bilingual mental health professionals, bilingual social scientists and English psychiatrists did the first translation, paying particular attention to conceptual and semantic equivalence. Eight Thai psychiatrists validated the Thai version of the EURO-D in an out-patient setting against the Thai version of the Mini International Neuropsychiatric Interview. This is a standardized clinical diagnostic interview for DSM-IV Axis-I disorders³¹. Based on the cut-of point of 5/6, the area under the ROC curve was 0.78 [95% confidence intervals (CI) 0.70–0.85], the kappa was 0.4 and internal consistency for the total scale measured by Cronbach's alpha was 0.72³⁰. The total score ranged from 0-12 and categorized in two groups, case and no case²⁸.

Independent variables

Age: The variable was grouped in three categories, 60-69, 70-79 and 80 years and more. The variables were assigned as 60-69 years=1, 70-79 years=2 and 80 years and more=3.

Gender: Gender was grouped in male and female. The response categories were assigned as male=0, female=1.

Educational level: Three categories were made, those who did not go to the school were assigned as 'no education=0, 1-3 years=1, & 4 years or more=2. **Marital status:** Under marital status the response categories were married, separated, divorced, single and widow. Then it was categorized as married=1, separated/ divorced/single=2 and widow=3.

Working status: Two categories were there, working=0 and not working=1.

Infirmity: A modified version of the Burvill physical illness scale (1990)³² covering the presence of 13 common health problems affecting different systems, including breathlessness, blackouts, arthritis, weakness, hearing difficulties and heart trouble. Every item has two response options (1=yes, 0=no). A composite index was developed from all 13 responses. The total score was 0-13. Then the index was categorized in three groups, '0-1 infirmity', '2-3 infirmity' and '4 or more infirmity'.

Disability: The brief version of the World Health Organization's Disability Assessment Schedule was used to rate disability over the past 30 days. The questions included understanding and communicating with the world, getting around, self-care, getting along with people, activities and participation in society. The 'disability in last 30 days' was assessed by 11 questions. Every question had 4 options: none, mild, severe and extreme/cannot do and had score from 0-3. The total score was 0-33. A composite index was created. The index was categorized in four groups, 0 score grouped as 'no disability', 1-11 score assigned as 'low disability', 11-22 scores were grouped under 'medium disability' and 23-33 score categorized as 'high disability'.

Serious life events: The list of Threatening Experiences in the light of qualitative work³³ and following advice from experts in measuring life events in older people. The adaptation included difficulties as well as events, restricting rating of events and difficulties to those remaining severe for over 3 weeks that occurred to the participant, an immediate family member or someone perceived as 'very close', and adding events for example, to do with caring for grandchildren³⁴. Six questions were selected for this study to measure the effect of serious life events which caused difficulty more than 2-3 weeks in the current year. Every item has two response options (1=yes, 0=no). A composite index was developed from the questions: illness, lack of contact with children, financial problem, accommodation, health problem of family member and care giver burden. The total score was 0-6. Then the index was categorized into three groups. 'no serious life event', '1-2 serious life events' and more than 2 serious life events'.

Analysis: First, univariate analysis was done to describe the percentage of the respondents' prevalence of depression, socio-demographic characteristics, infirmity, disability and serious life events. Bivariate analysis with chi-square test was performed to identify associated factors to the depression. The variables were further examined in the multivariate analysis (logistic regression) in

order to identify the significant predictors of depression after controlling for other variables. During the process of analysis, multi-collinearity among the variables was assessed. As there was high collinearity between working status and current occupation was found, current occupation was dropped from the multivariate analysis. Other variables were not highly correlated and they were included in the logistic model.

Results

The prevalence of depression was 27.5 percent. Most of the respondents were 60-69 years of old, had 4 years or more schooling and married (Table I). Around 54 per cent respondents had more than 3 infirmities (Figure 2), low disability (Figure 3) and 1-2 serious life events (Figure 4).

Table 1: Socio-demographic characteristics of elderly people in rural KDSS, Thailand, 2006

Characteristics	N	%
Age		
60-69 years	545	54.4
70-79 years	358	35.8
80 years and above	98	9.8
Gender		
Male	445	44.5
Female	556	55.5
Education		
No schooling	305	30.5
1-3 years	160	16.0
4 years (primary) and more schooling	536	53.5
Marital status		
Married	547	54.6
Widow	401	40.1
Single/Separated/divorced	53	5.3
Working status		
Working	523	52.2
Not working	478	47.8
Current occupation		
Agriculture	330	33.0
Non-agriculture	193	19.3
Not working	478	47.7
Total	1,001	100.0

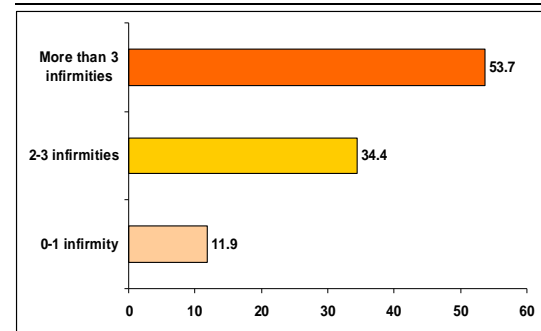


Figure 2: Infirmity among elderly people in rural KDSS, Thailand, 2006, (n=1,001)

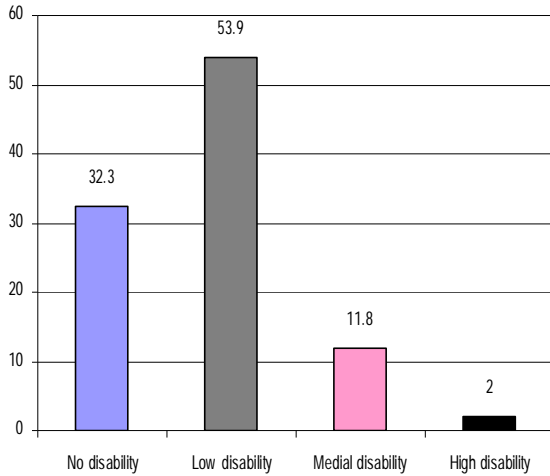


Figure 3: Disability among elderly people in rural KDSS, Thailand, 2006, (n=1,001)

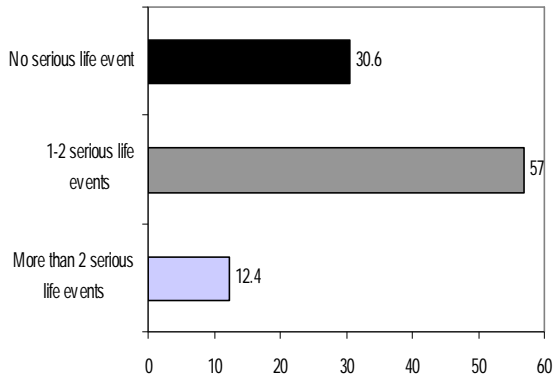


Figure 4: Serious life events among elderly people in rural KDSS, Thailand, 2006, (n=1,001)

In bivariate analysis, depression had highly significant association (p value: 0.001) with age, gender, education, marital status, working status, current occupation, infirmity, disability, serious life events and self-assessed health. The oldest old had higher proportion of depression compare to younger old. Female had higher proportion of depression compare to male. Those had no schooling or less than 4 years of schooling, had more depression compare to those had 4 years and more schooling. Widow and separated/divorced/single respondents had higher proportion of depression compare to married. The working respondents and those who worked in the agriculture sector had less depression compare to not working and working in non-agriculture sector. The respondents who had more than 3 infirmity or health problems, and medium or high disability had higher proportion of depression compare to those had no or less infirmity and disability (Table II).

The results of binary logistic regression found that infirmity, disability and serious life events had significant effect on depression of the respondent. Physical health played an important role for these respondents' mental health. Those who had 4 or more infirmity, they were 2.08 times more likely to have depression compare to those who had no or only 1 infirmity. This indicates that the multiple diseases are strong risk factor for the depression at late age. Disability was another strong predictor of the depression. It should be mentioned here that those who had medium disability, had the chance of depression 3.12 times more compared to those who had no disability. Serious life event is another major factor for the respondents. Those who had 3 or more serious life events they had the depression 5.25 times more compare to those who had no serious life event in last year (Table III).

Table II: Depression of elderly people with selected characteristics in rural KDSS, Thailand, 2006

		Depression	Total
Age***	60-69 years	22.4	545 (100.0)
	70-79 years	34.6	358 (100.0)
	80 years and above	39.8	98 (100.0)
Gender***	Male	19.3	445 (100.0)
	Female	35.8	556 (100.0)
Education***	No schooling	37.7	305 (100.0)
	1-3 years schooling	31.9	160 (100.0)
	4 years (primary) & more	22.2	536 (100.0)
Marital status***	Married	22.1	547 (100.0)
	Widow	36.2	401 (100.0)
	Separated/divorced/singe	35.8	53 (100.0)
Working status***	Working	22.2	523 (100.0)
	Not working	35.4	478 (100.0)
Current occupation***	Agriculture sector	18.2	330 (100.0)
	Non-Agriculture sector	29.0	193 (100.0)
	Not working	35.4	478 (100.0)
Impairment***	0-1 impairment	5.9	119 (100.0)
	2-3 impairments	18.3	344 (100.0)
	More than 3 impairments	40.0	538 (100.0)
Disability***	No disability	9.3	323 (100.0)
	Low disability	32.2	540 (100.0)
	Medium disability	57.6	118 (100.0)
	High disability	65.0	20 (100.0)
Serious life events in last 1 year***	No serious life event	13.1	306 (100.0)
	1-2 serious life events	30.3	571 (100.0)
	More than 2 serious life events	58.1	124 (100.0)
Total			1,001 (100.0)

***p value: <0.001

Table III: Adjusted odds ratio (OR) of depression among older people by selected characteristics in KDSS, Thailand in 2006

Variable		Odds ratio	Std. Err.	Sig. level
Age	60-69 years (ref)	1.00		
	70-79 years	0.96	0.2652639	0.891
	80 years and above	5.06	5.327	0.122
Gender	Male (ref)	1.00		
	Female	1.43	0.4106525	0.206
Education	Primary or more (ref)	1.00		
	1-3 years	2.17	0.9855232	0.087
	No schooling	1.31	0.4107729	0.384
Marital status	Married (ref)	1.00		
	Widow	0.88	0.2692485	0.694
	Separated/divorced	2.11	1.593958	0.319
Work	Working (ref)	1.00		
	Not working	0.76	0.2112423	0.324
Infirmity	0-1 (ref)	1.00		
	2-3	1.02	0.3236875	0.933
	4+	2.08	0.7473537	0.041
Disability	No disability (ref)	1.00		
	Low disability	1.25	0.3489871	0.416
	Medium disability	3.12	1.3924	0.011
	High disability	3.81	4.008688	0.203
Serious life events	No serious life events	1.00		
	1-2	1.50	0.3744883	0.098
	3 +	5.25	3.941786	0.027

N1=1001, Pseudo R square=0.1255, Sig. =0.0000

Discussion

This study found multiple predictors are responsible for depression of the older people living in the rural KDSS area of Thailand. They are the infirmity, disability and serious life events. Life expectancy at birth increased from 58.0 years for males and 63.8 years for females in 1975³⁴ to 69.5 for males and 76.3 for females in 2010³⁵. The recent data of Thailand shows that proportion of people suffering from chronic diseases and disability is increasing. Other studies also found that majority of the older people have one or more chronic conditions and many suffer from multiple physical disorders that restrict their activities^{13,16}. According to National Health Statistics the leading burden of disease in Thai population has been shifting to non-communicable diseases³⁶. But the socio-demographic factors were not significant to predict depression of older people. We found that the proportion of depression increased with age. Although our finding is different from previous research which found that overall distress and anxiety decreases with age, it is consistent with past literature indicating that depressive symptoms significantly increase with age³⁷⁻³⁸.

This study identified three major predictors of depression of older people in Thailand. The policy makers should consider these predictors to design mental health program for older people in Thailand.

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