ภาวะซึมเศร้าและความบกพร่องเกี่ยวกับความรู้ ความเข้าใจของผู้สูงอายุในชุมชนจังหวัดขอนแก่น : การศึกษาเชิงพรรณนา ณ สถานบริการปฐมภูมิ

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บทคัดย่อ

บทนำ ประชากรผู้สูงอายุมีมากขึ้นเรื่อยๆ ความชุกของภาวะซึมเศร้าและความบกพร่องเกี่ยวกับ ความรู้ความเข้าใจในผู้สูงอายุเพิ่มมากขึ้นอย่างรวดเร็ว แต่ข้อมูลเกี่ยวกับเรื่องนี้ในสถานบริการปฐมภูมิ ภาคตะวันออกเฉียงเหนือของประเทศไทยยังไม่มี

วัตถุประสงค์ เพื่อศึกษาความชุกและปัจจัยที่สัมพันธ์กับภาวะซึมเศร้าและความบกพร่องเกี่ยวกับความรู้ ความเข้าใจในผู้สูงอายุคนไทย (อายุตั้งแต่ 60 ปีขึ้นไป) ที่อาศัยอยู่ในชุมชนเมืองและอยู่ในเขตรับผิดชอบ ของสถานบริการปฐมภูมิ จังหวัดขอนแก่น

วิธีการศึกษา ใช้รูปแบบการศึกษาเชิงพรรณนา สุ่มตัวอย่างแบบ systematic random sampling จากทะเบียน รายชื่อผู้มีอายุตั้งแต่ 60 ปีขึ้นไปที่ขึ้นทะเบียนกับสถานบริการปฐมภูมิชุมชนสามเหลี่ยมเขตเมืองขอนแก่น จำนวนทั้งหมด 1,662 คน เลือกมา 206 คน เครื่องมือที่ใช้ คือ 1) Thai Geriatric Depression Scale (TGDS) เพื่อคัดกรองภาวะซึมเศร้าใช้จุดตัดที่ค่าคะแนนตั้งแต่ 13 ขึ้นไป 2) Thai Mental State Examination (TMSE) คัดกรองความบกพร่องเกี่ยวกับความรู้ความเข้าใจในผู้สูงอายุ ใช้จุดตัดที่ค่าคะแนนน้อยกว่า 24 3) แบบ บันทึกทางการแพทย์ที่มีการวินิจฉัยภาวะซึมเศร้าและโรคทางกายเรื้อรัง 5 โรค ได้แก่ ความดันโลหิตสูง เบาหวาน โรคหลอดลมอุดตันเรื้อรัง โรคเส้นเลือดหัวใจตีบ และปวดเรื้อรังนานกว่า 6 เดือน 4) แบบสอบถาม ข้อมูลทั่วไปและเหตุการณ์ชีวิตที่ทำให้เกิดความเครียด สถิติวิเคราะห์ใช้ percent, prevalence rate with 95% CI, odd ratio, multiple logistic regression
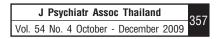
ผลการศึกษา กลุ่มตัวอย่างผู้สูงอายุที่เข้าร่วมการศึกษาครั้งนี้มี 200 คน คิดเป็นอัตราการตอบรับร้อยละ 97.1 เป็นหญิง 113 คน (ร้อยละ 56.5) อายุเฉลี่ย 69.2+7.2 ปี (พิสัย 60-96 ปี) ความชุกของภาวะซึมเศร้า พบร้อยละ 21.0 (95%CI: 15.3%, 26.7%) ความชุกของความบกพร่องเกี่ยวกับความรู้ความเข้าใจพบร้อยละ 27.0 (95%CI: 20.8%, 33.2%) ปัจจัยที่มีความสัมพันธ์กับภาวะซึมเศร้าในผู้สูงอายุอย่างมีนัยสำคัญทางสถิติ คือ อายุ โรคเส้นเลือดหัวใจตีบ ความบกพร่องเกี่ยวกับความรู้ความเข้าใจ เหตุการณ์วิกฤติในชีวิต

สรุป อัตราความชุกของภาวะซึมเศร้าและความบกพร่องเกี่ยวกับความรู้ความเข้าใจในผู้สูงอายุคนไทย ณ สถานบริการปฐมภูมิมีค่าสูง ปัจจัยเสี่ยงต่อภาวะซึมเศร้า คือ อายุ โรคเส้นเลือดหัวใจตีบ ความบกพร่อง เกี่ยวกับความรู้ เหตุการณ์วิกฤติในชีวิต

คำสำคัญ ภาวะซึมเศร้า ความบกพร่องเกี่ยวกับความรู้ความเข้าใจ โรคทางกายเรื้อรัง สถานบริการปฐมภูมิ ผู้สูงอายุ

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Depression and Cognitive Impairment among the Community Dwelling Elderly in a Community of Khon Kaen : A Primary Care Setting Descriptive Study.

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Abstract

Background: In elderly people, there has been a rapid increasing prevalence of both depression and cognitive impairment. However, the magnitude of geriatric depression and cognitive impairment in primary care of northeastern Thailand is not well understood.

Objective: To explore the prevalence of depression and cognitive impairments, as well as their association among the elderly community residents (age $\geq$ 60) in an urban primary care unit of Khon Kaen.

Methods: This study was a descriptive study. There were 13,604 individuals lived in there and registered at PCU Samliam, and 1,662 elderly residents were listed for systematic random sampling. Sample size was 206 subjects as needed. Instruments were used as the following: 1) Thai Geriatric Depression Scale (TGDS) for screening depression with TGDS$\geq$13, 2) Thai Mental State Examination (TMSE) for screening cognitive impairment with TMSE < 24, 3) medical records from primary care for diagnoses of depression and five selective chronic medical conditions (i.e. hypertension, diabetes mellitus, chronic obstructive pulmonary disease, coronary heart disease and chronic pain symptoms $\geq$6 months) 4) questionnaire for demographic data and stressful life events. Data analysis was conducted by percent, prevalence rate with 95%CI, odds ratio, and multiple logistic regression.
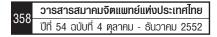
Results: The sample consisted of 200 subjects who registered in Primary Care Unit Sam Liam. The response rate was 97.1%. There were 87 (43.5%) males and 113 (56.5%) females. Their mean age was 69.2$\pm$7.2 years (range: 60 - 96 years). The prevalence of depression and cognitive impairment were 21.0% (95%CI: 15.3%, 26.7%) and 27.0% (95%CI: 20.8%, 33.2%) respectively. Age, ischemic heart disease, cognitive impairment, life crisis were risk factors which associated with depression.

Conclusion: There was a high prevalence of depression and cognitive impairment in primary health care setting. Depression rose with age, and significantly related to cognitive impairment, ischemic heart disease and life crisis.

Keywords: Depression, cognitive impairment, chronic medical conditions, primary care, elderly

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Introduction

In late life, depression is a common under-detected and untreated affective disorder in primary care[1]. It mainly affects those elderly who have chronic medical illness and cognitive impairment. It is a consensus that depression causes suffering, family disruption and increasing disability, worsens the outcome of many medical illnesses, and diminishes quality of life, increases morbidity, mortality, suicidal ideations and health care costs[1]. Depression usually presents with depressed mood, loss of interest or pleasure, feeling of guilt and low self-worth, disturbed sleep or appetite, low energy and poor concentration[2]. There has been a fast increasing prevalence of depression in Thai society regards to the prolonged psychosocial stress and break down the traditional protective mechanisms (i.e. family disintegration, social isolation and unsettling effects of annihilating) that arising from the rapidly changing social and physical circumstances.

Moreover geriatric depression is frequently associated with cognitive impairment in terms of dementia, or that may reflect disruption to subcorticofrontal brain circuits, maybe a harbinger of irreversible dementia in the elderly people. They not only share many presentations such as depressive mood, sleep disturbance, constipation, and loss of weight, anorexia, anxiety, lower motor functions and fatigue, but also share some causes such as trauma, tumors, and neurovascular problems. Also the depressive subjects usually have showed a tendency of low interest in responses of cognitive test that may be helpful to recognize pseudo-depression. So dementia among those community elderly residents would also be detected in this research. The association between depression and cognitive impairment would be investigated by multiple logistic regression after adjusted the common confounders such as social demographic factors (i.e. age, sex, educational level, marital status, living status), general chronic medical conditions (i.e. hypertension, diabetes mellitus, chronic obstructive pulmonary disease, ischemic heart disease and chronic pain symptoms ≥ 6 month)[3-5], and stressful life events (i.e. financial crisis, life crisis).

Depression is common for the elderly, a review indicated that the prevalence of subsyndromal depression (i.e. symptoms of depression that do not meet standard criteria for major depression, screening by standardized depressive scale such as Geriatric Depression Scale, Beck Depression Scale, Hamilton Rating Scale for Depression) approached 25%[6]. And about 25% of the patients with subsyndromal depression develop major depression within 2 years[1]. From the previous research, the prevalence of depression for Thai elderly people (≥ 60 years old) ranged from 12.8% to 31.6%, the prevalence of cognitive impairment for Thai elderly people (≥ 60 years old) ranged from 5.6% to 32.8%[7-10]. However, the magnitude of geriatric depression and cognitive impairment in primary health care setting of northeastern Thailand are not well understood.

Objectives of the study

1. to explore the prevalence of depression among the elderly community residents (age ≥ 60) in an urban primary care unit of Khon Kaen.

2. to explore the prevalence of cognitive impairment among the elderly community residents (age ≥ 60) in an urban primary care unit of Khon Kaen.

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3. to explore the association between depression and cognitive impairment among the elderly community residents (age $\geq$ 60) in an urban primary care unit of Khon Kaen.

Materials and Methods

This study was a descriptive study. The study area was an urban community (i.e. community Samliam) located in Muang district of Khon Kaen. The eligible criteria for study population were the elderly residents who registered in the integrated primary care computer system of PCU Sam Liam, aged 60 or older, either sex, spoken language comprehensible, without hearing problem, and without severe psychosis (such as schizophrenia or others). There were 13,604 individuals lived in there and registered at PCU Samliam integrated computer system including 1,662 elderly residents. All of elderly residents who registered at primary care unit (PCU) Sam Liam were recruited as study population. But if any of study subjects after sampling had been confirmed with severe psychosis, spoken language incomprehensibility and hearing problem, the other subjects would be systematic sampled instead of them.

The sample size was determined by descriptive study formula for systematic sampling technique as same as simple random sampling. The formula showed as following:
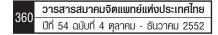
$$ n = \frac{z^2_{\frac{\alpha}{2}}\ p(1\text{-}p)}{d^2} $$

The confidence level was 95% and the acceptable error was 80% of assumed prevalence. The assumed prevalence was adopted from Suparus et al[9]. study as 31.6%. For Suparus et al[9]. study, its age setting was including mid-age population ($\geq$ 45).

However, their study also provided the prevalence of depression for old age ($\geq$ 60) that was separated from the mid-age group as 31.6%. Furthermore, its setting was community based in northern region of Thailand; therefore, the prevalence of depression was adopted in this study. After calculation, 206 subjects would be required to assure the statistical power.

The questionnaire for data collection was consisted of social demographic items i.e. age, sex, educational level, marital status, living status; 17 stressful life events items i.e. financial crisis, life crisis, abuse, being deceptive, loss in gambling, valuable property loss, relationship broken off, death of spouse or children, death of close family members, retirement, conflict with close friends, Fired from job, detentions and others; general chronic medical conditions i.e. hypertension (HT), diabetes mellitus(DM), chronic obstructive pulmonary disease (COPD), ischemic heart disease (IHD) and chronic pain symptoms $\geq$6 month (CPS); Thai Geriatric Depression Scale (TGDS) and Thai Mental State Examination (TMSE).

TGDS is the only validated scale for detecting geriatric depression with Thai elderly people. The accuracy of TGDS showed by cronbach alpha coefficient was 0.93[11]. TGDS score $\geq$ 13 was the cutoff point for TGDS, however, sensitivity and specificity of TGDS haven't been found from literature by far. TMSE is the first neuropsychiatric test for the standard cognitive function examination for Thai people by adjusting Thai culture and situations. TMSE score $\leq$ 23 was the cutoff point for cognitive impairment with the sensitivity as 93.98% and specificity as 84.2%[12]

The chronic medical conditions and depression status also were confirmed with medical records and

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prescriptions in both primary care and tertiary care (i.e. Srinagarind Hospital of Khon Kaen University) by a clinician. The presence or absence of chronic medical conditions was based on their doctors' diagnosis and prescriptions. However, there were not any records of severe psychosis, spoken language incomprehensibility and hearing problem among those elderly residents in primary care.

The data collection consisted of 2 stages. For the first stage, 4 experienced research assistants (bachelor graduates) had been trained for conducting a survey with TGDS and TMSE by a psychiatrist. The inter-rater reliability among the 4 assistants had been tested by kappa test item by item (the kappa coefficient at least 0.7). However, power of the test probably low due to total sample size equal to 10 subjects. For the second stage, medical records and prescriptions of the recruited elderly residents in primary care and tertiary care were reviewed by a clinician in order to confirm chronic medical conditions and depression status with the results of the first stage survey.

Protocol of this study had been reviewed and approved by the Research Ethic Committee of Khon Kaen University. Each subject had signed an informed consent form after been informed the study procedure and willing to participate.

Results

The characteristics of the overall sample were shown in Table 1. Of the 206 samples, 200 subjects were completed as the response rate was 97.1%. There were 87 (43.5%) males and 113 (56.5%) females. Their median age was 68.0 ± 10.0 years (range: 60-96 years). Of them, 14 subjects never got education from school,

more than half (60%, 123 subjects) had completed primary school level, one third (32%, 64 subjects) had at least 9 years education. One quarter of these 200 samples were widow or widower, and 71.0% of them were married and lived with their spouses.

The prevalence of depression on screening test (TGDS$\geq$13) was 15.0% (95%CI=10%-20%), the prevalence of cognitive impairment (TMSE$\leq$23) was 27% (95%CI=20.8%-33.2%) among those community dwelling elderly subjects. For results of the medical records, it showed that 15 subjects were diagnosed depression (including major depression, dysthymia and bipolar) in Srinagarind Hospital last year i.e. the prevalence of diagnosed depression was 7.5% (95%CI: 3.8%, 11.2%), 12 of them had good control of their depression with antidepressants as TGDS score was less than 13, the other 3 subjects were still in depression as TGDS were 18, 24 and 27 respectively. The prevalence of depression (total) was 21% (95%CI: 15.3%, 26.7%).

For the chronic medical conditions, the prevalence of DM was 25.0% (95%CI: 19.0%, 31.1%), of HT was 47% (95%CI: 40%, 54%), of IHD was 5.5% (95%CI: 2.3%, 8.7%), of COPD was 2.5% (95%CI: 0.3%, 4.7%), and chronic pain syndrome (duration $\geq$6 months) was 30%. Based on bivariate analysis of the stressful life events and depression, only 2 items put in the multiple logistic regression analysis i.e. financial crisis and life crisis. There were 13 subjects (6.5%) suffering from financial crisis and 23 subjects (11.5%) suffering from life crisis.

The association of cognitive impairment with depression adjusted other factors was shown in Table 2. The analysis was divided to 2 steps with 2 models.

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Table 1 Characteristics of the sample: demographic characteristics, TGDS depression, TMSE cognitive impairment, chronic conditions, financial crisis and life crisis
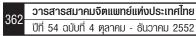
Characteristics	Frequency	Percentage	95% CI
	n (Total N=200)	%	% (MIN- MAX)
1. Sex			
Male	87	43.5	
Female	113	56.5	
2. Age			
60 - 69	115	57.5	
70 - 79	64	32.0	
$\geq$80	21	10.5	
Mean$\pm$SD/Median	69.2$\pm$7.2	68.0$\pm$10.0	
Range (Min/Max)	60 (min)	96 (max)	
3. Education			
Never	14	7.0	
Primary school	123	61.5	
Secondary school and above	63	31.5	
4. Marital status			
Married	142	71.0	
Separated	6	3.0	
Divorce	3	1.5	
Widow or widower	49	24.5	
5. Living status			
Living with family	194	97.0	
Living alone	6	3.0	
6. Depression (TGDS$\geq$13)	30	15.0	10.0-20.0
7. Depression (Medical records)	15	7.5	3.8-11.2
8. Depression (total=TGDS$\geq$13+Medical records)	42	21.0	15.3-26.7
9. Chronic conditions			
Cognitive impairment (TMSE$\leq$23)	54	27.0	20.8-33.2
Depression + Cognitive impairment	22	11.0	6.6-15.4
DM	50	25.0	19.0-31.1
HT	94	47.0	40.0-54.0
IHD	11	5.5	2.3-8.7
COPD	5	2.5	0.3-4.7
chronic pain syndrome (CPS)	60	30.0	23.6-36.4
10. Stressful life events			
Financial crisis	13	6.5	3.1-10.0
Life crisis	23	11.5	7.0-16.0

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Table 2 Logistic regression of sex, educational level, marital status, age, chronic conditions, stressful life events
and cognitive impairment on depression (N=200)

Variable	Total	Depression		Adj. Odds ratio	Adj. Odds ratio
	N=200	-	+	(95%CI) of model 1	(95%CI) of model 2
Sex		158	42		
Male	87	69	18	1	
Female	113	89	24	0.754 (0.29-1.99)	
Education Level					
Never	14	6	8	1	
Primary	123	95	28	0.39 (0.12-1.24)	
Secondary or above	63	57	6	0.24 (0.04-1.46)	
Marital status					
Married	142	115	27	1	
Widow, widower, divorce and others	58	43	15	1.07 (0.38-3.03)	
Age				1.09 (1.02-1.16)	1.09 (1.03-1.16)
DM -	150	119	31	1	
DM+	50	39	11	2.49 (0.58-10.70)	
HT-	106	87	19	1	
HT+	94	71	23	1.46 (0.52-4.05)	
HT&DM -	167	131	36	1	
HT&DM+	33	27	6	0.38 (0.05-2.78)	
COPD-	195	156	39	1	
COPD+	5	2	3	1.75 (0.18-16.72)	
IHD-	189	154	35	1	1
IHD+	11	4	7	12.55 (2.47- 63.67)	12.86 (3.09- 53.50)
CPS-	140	115	25	1	
CPS+	60	43	17	1.74 (0.69-4.39)	
Cognitive impairment -	145	126	20	1	1
Cognitive impairment +	54	32	22	2.56 (0.98-6.69)	3.23 (1.34-7.78)
Financial crisis -	187	156	39	1	
Financial crisis +	13	2	3	4.23 (0.33- 53.77)	
Life crisis -	177	148	29	1	1
Life crisis +	23	10	13	6.35 (1.95-20.68)	8.52 (2.94-24.66)
Goodness of fit test					
Pearson p-value				0.654	0.768

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The model 1 included all interested variables i.e. cognitive impairment, DM, HT, DM+HT, IHD, COPD and CPS, as well as the selected adjusted factors i.e. age, sex, education level, marital statues, financial crisis and life crisis. The model 2 was the best model, only included the significant factors by step back method.

In this sample, depression rose with age, ischemic heart disease, life crisis and cognitive impairment. These univariate analyses confirmed the significant relationship between depression and cognitive impairment in primary care among community dwelling elderly residents in northeastern of Thailand.
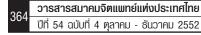
Discussion

In the present study, the prevalence of diagnosed depression from medical records was high as 7.5% (95%CI: 3.8%, 11.2%), compared with the prevalence of major depression among the community dwelling older people is 1 to 4 percent[1] and 2 percents of dysthymia[6]. The prevalence of depression was 21.0% (95%CI:15.3%,26.7%) as approaching the international level as Lebowitz finding approaching 25%[6].

In Thai elderly, using the same measure (TGDS) for depression as this study, Sukhatunga K, et al. found the prevalence of depression was 24.1%[8], Thongtang, et al. found the prevalence of depression was 12.8%[10]. In this study, we found the prevalence of depression with TGDS was 15.0% (95%CI: 10.0%, 20.0%) in the range of those previous study. However, these differences might due to different medical conditions, medication consumptions, regions circumstances, allocation of subjects and other factors. And the prevalence of depression in this study was lower than the prevalence of depression in Suparus W, et al. study

for the elderly people group as 31.6%[9] that may due to the different screening scale. For Suparus's study, they not only investigated depression among elderly group, but also included mid-age people group (45-59 years old). So the TGDS might not appropriate for their study. Therefore, Thai Back Depression Inventory (BDI) was used in their study. Even though BDI has been used in the elderly, but it is not designed for old people. It contained many somatic symptoms items that may not due to depression in the elderly but aging, thereby, would cause overestimating the severity of depression among the elderly. In the present study, we also found the prevalence of cognitive impairment was high, but still lower than the prevalence of cognitive impairment with same measure (TMSE) in Sukhatunga, et al study as 32.8%[8].

The association between depression and cognitive impairment adjusted other factors among those elderly subjects in this community was as significant as several previous literatures indicated[1,6]. The depression increased with age, related to ischemic heart disease and life crisis among those community elderly as other studies showed[8,9,13]

The strengths of this study were good response rate 97% regarding to good cooperation with the PCU and the health volunteers, and reliable data of both chronic medical conditions and depression disorders based on medical records and description of the sample in primary and tertiary care for multiple logistic regression analysis. Nonetheless, several limitations deserve mentioning. For the sample size determination, the acceptable error was set as 20% may limit the power of this study. Other factors that would ideally have been related to depression such as substance

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abuse, thyroid disorders were not reviewed in this study. However, those factors probably regarded to limited time and budget to conduct this study.

Conclusion

The present study found that the prevalence of depression and the prevalence of cognitive impairment among the community elderly people were high. There was a significant association between depression and cognitive impairment. The depression rate rose with age among the community dwelling older people. Ischemic heart disease and life crisis were the significant risk factors for depression. Further research work about the predictive chronic condition risk factors of depression in primary care in northeastern region of Thailand will provide information for clinicians and policy makers that help them to make the appropriate prevention and intervention plan possible to reduce the harmful outcome of both depression and chronic conditions in primary care.

Acknowledgement

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