

Prevalence of Depression and its Associated Factors among Caregivers of Patients with Schizophrenia

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Objective: To examine the prevalence of, and the factors that are associated with, depression among primary caregivers of schizophrenic patients.

Materials and Methods: This cross-sectional study was conducted at the Psychiatric Outpatient Department [OPD], Siriraj Hospital, and collected data from one caregiver per patient. A total of 88 caregivers were enrolled. The instruments comprised of a questionnaire for caregivers, and a structured interview that assessed the diagnostic criteria of depression, which was based on the Mini-International Neuropsychiatric Interview [MINI]-Thai version.

Results: In the present study, the prevalence of depression among caregivers of schizophrenic patients was 11.4% (95% CI 6.3 to 19.7), comprised of major depressive episodes (4.5%) and dysthymia (6.8%). Insufficient monthly income (OR 5.11, 95% CI 1.20 to 21.64) and a medical problem of the caregiver (OR 16.07, 95% CI 1.93 to 133.51) were found to be statistically-significant results associated with caregivers' depression.

Conclusion: The caregivers of schizophrenic patients should be given empathy and be alerted to the risk of becoming depressed, especially in the cases of those caregivers who have a medical problem and an insufficient monthly income.

Keywords: Prevalence, Depression, Caregivers of schizophrenic patient

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Schizophrenia is a chronic, mental illness that mostly disturbs an individual's thinking processes, emotions, perceptions, and behavior which makes it difficult to function at work⁽¹⁾. Currently, many hospitals in Thailand could not accommodate all psychiatric patients. They provided treatments patients diagnosed with severe and acute phases that might be dangerous for both the patients and other people; in contrast, the hospitals usually discharged those patients with a relatively-mild, psychiatric impairment. Therefore, families have an important and inevitable role in caring for patients who still have residual symptoms⁽²⁻⁴⁾.

The primary caregivers of schizophrenic patients are directly affected by providing care for them. A review of the literature associated with mental health

and depression among caregivers found that 30 percent had mental health problems^(3,5). In addition, another study⁽⁶⁾ reported that caregivers who had taken care of patients for a long time felt fatigued and hopeless, and were liable to become depressed. A further study by Osman⁽⁷⁾ of the caregivers of schizophrenic patients found that 6 percent had depression and 14 percent had psychological distress. Moreover, the caregivers felt burdened and guilt^(8,9).

Depression is an important problem around the World including Thailand. In many cases it leads to suicidal behavior. The World Health Organization [WHO] has predicted that in 2020, depression will rank as the second most common mental problem in the World. In Thailand, about 5 percent, or around 3 million people, suffered from depression⁽¹⁰⁾. Depression impacts on school and work performance, home and family life among other responsibilities. It carried more risk of alcohol dependence, substance abuse, suicide and homicide⁽¹¹⁾. Moreover, researches had shown that there is a tendency toward depression among caregivers

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as high as 78 percent⁽¹²⁾.

Objective

To examine the prevalence of, and the factors that are associated with, depression among primary caregivers of schizophrenic patients.

Materials and Methods

This was a cross-sectional study conducted at the Psychiatric Outpatient Department at Siriraj Hospital, Bangkok. Purposive sampling was used according to the inclusion criteria from June 2015 until the target population was reached. The sample size was calculated using the sample size formula of Cochran⁽¹³⁾, as followed:

$$\begin{aligned} \text{The number of sample (n)} &= \frac{z^2 pq}{d^2} \\ &= \frac{(1.96)^2 (0.06) (0.94)}{(0.05)^2} \\ &= 86.67 \end{aligned}$$

z = Value of normal curve in statistically significant level is at 0.05, with 95% of confidence equal to 1.96.

p = The proportion of population; the prevalence of depressive disorders among caregivers of patients with schizophrenia from the study of Osman et al⁽⁷⁾ is 6 percent, $p = 0.06$.

$q = 1 - p$

d = Value of acceptable maximum error = 0.05

Only one caregiver of each patient was selected. A total of 88 primary caregivers were enrolled in this study.

Inclusion criteria

The following eligibility criteria were used for the caregivers:

- 1) At least 20 years of age
- 2) Has primary responsibility of caring for a patient who has been diagnosed with schizophrenia.
- 3) Has been responsible for providing continuous care for the patient for more than 6 months.
- 4) Is important to the patient.
- 5) Lives with the patient in the same household.
- 6) Able to listen to, speak, read and understand Thai.
- 7) Does not get any remuneration for caring for the patient.

- 8) Consents to be a participant in the research.

Exclusion criteria

- 1) Schizophrenic patients who have been diagnosed to have comorbidity.
- 2) Caregivers who take care of more than one patient with schizophrenia.
- 3) Caregivers who take care of other chronic patients who could not do self-care.

Research instruments

Two questionnaires were used as instruments of data collection: a socio-demographic characteristics questionnaire for caregivers, and the clinical interview for psychiatric diagnosis (Mini-International Neuropsychiatric Interview [MINI]-Thai version).

The MINI is a brief, structured interview for psychiatric diagnosis based on the criteria of the American Psychiatric Association [APA] and the World Health Organization. In the present study, however, the researchers used only 4 modules, which were major depressive episodes, dysthymia, suicide ideality, and alcohol abuse and dependence. The MINI-Thai version has been shown to have very high specificity, negative predictive value and efficiency in all modules (>0.81)⁽¹⁴⁾. Prior to conducting the interviews and collecting data, the researchers explained the objectives of the research to the participants as followed: the benefits for participation, method of data collection, the duration of data collection (approximately 30 minutes), and the steps that would be taken to preserve the anonymity of the data (in order to ensure the identity and confidentiality of the participants, and protect their human rights). The participants verbally agreed to participate in this study, and were asked to sign an informed consent form.

The caregivers may refused to participate in the research with no affects on the patient's treatment or denied access by either the caregiver or the patient to any other services. Similarly, if a participant opted to withdraw from the study during the data collection phase, the data collection would end immediately without any repercussions.

Data analysis

The data was analyzed by frequency, percentage, 95% confidence interval [CI] for prevalence, means and standard deviation. The associations between the risk factors and depression were analyzed using Pearson's Chi-square test and Fisher's exact test.

Table 1. Socio-demographic characteristics of participants (n = 88)

Variables	Number	Percentage
Age		
20 to 60 years	51	58
>60 years	37	42
Gender		
Male	27	30.7
Female	61	69.3
Marital status		
Single	20	22.7
Married	57	64.8
Widowed/divorced/separated	11	12.5
Care assistance		
Have	52	59.1
Not have	36	40.9
Education		
Illiterate/primary education	27	30.7
Secondary education, graduation and above	61	69.3
Occupation		
None	19	21.6
Business owner	22	25.0
Freelance	15	17.0
Business employee	8	9.1
Government officials	6	6.8
Others	18	20.4
Income per month		
Sufficient	75	85.2
Insufficient	13	14.8
Relationship to the patient		
Parents	44	50.0
Spouse	12	13.6
Child	12	13.6
Relatives	20	22.7
Health-service access		
Easy to access	83	94.3
Not easy to access	5	5.7
Duration of patient's care		
6 months to 1 year	9	10.2
>1 to 2 years	10	11.4
>2 to 4 years	10	11.4
Over 4 years	59	67.0
Duration of patient's illness		
6 months to 1 year	7	8.0
>1 to 2 years	8	9.1
>2 to 4 years	12	13.6
Over 4 years	61	69.3
Levels of relationship in family		
Poor	2	2.3
Moderate	22	25.0
Good	39	44.3
Excellent	25	28.4

Table 1. Cont.

Variables	Number	Percentage
Knowledge about patient's care needs		
Have	50	56.8
Not have	38	43.2
Medical problem of caregiver		
Yes	37	42.0
No	51	58.0
Patient's symptoms		
Positive symptoms		
No problem	51	58.0
Problem	37	42.0
Negative symptoms		
No problem	46	52.3
Problem	42	47.7
Cognitive symptoms		
No problem	60	68.2
Problem	28	31.8
Aggression		
No problem	71	80.7
Problem	17	19.3

Ethical consideration

The study was conducted with the approval of the Siriraj Institutional Review Board [SIRB], Faculty of Medicine, Siriraj Hospital, Mahidol University; Si. 226/2015.

Results

Table 1 showed the socio-demographic characteristics of the participants. The mean age of the caregivers was 56.82 years \pm 14.5 SD; 69.3 percent were female, and 50 percent were the parents of the patients. Most caregivers had taken care of the patients for at least 4 years (67%), which conformed with the duration of the illness for most patients in the study being over 4 years (69.3%). Nearly half of the caregivers did not have care assistants (40.9%), lacked knowledge of the appropriate care of the patient (43.2%), and had a medical problem (42%). The symptoms of the schizophrenic patients that gave the caregivers the most problems were frequency, negative symptoms, positive symptoms, cognitive symptoms and aggressive symptoms (47.7, 42, 31.8 and 19.3 percent, respectively).

Table 2 illustrated that depression was evident in 10 (11.4%) out of the total of 88 caregivers in the study. Of those 10, the depression was further divided into major depressive episodes (4 people; 4.5%), and

Table 2. Prevalence of depression and suicidal ideation among caregivers of schizophrenic patients

	Number	Percentage	95% CI
Depression	10	11.4	6.3 to 19.7
Major depressive episode	4	4.5	1.8 to 11.1
MDE current	2	2.8	
MDE recurrent	2	2.8	
Dysthymia	6	6.8	3.2 to 14.1
Suicidality	5	5.7	2.5 to 12.6
Low risk	4	4.5	
High risk	1	1.1	

Table 3. The association between risk factors and depression among caregivers of schizophrenic patients

	Number	Odds ratio (95% CI)	<i>p</i> -value
Depression	10		
Insufficient monthly income		5.11 (1.20 to 21.64)	0.037
Medical problem of caregiver		16.07 (1.93 to 133.51)	0.001
Age group		0.91 (0.24 to 3.48)	0.59
Gender		1.89 (0.37 to 9.54)	0.353
Care assistance		2.4 (0.63 to 9.21)	0.168
Education		0.53 (0.10 to 2.68)	3.53
Knowledge about patient's care		3.53 (0.85 to 14.73)	0.070
Health-service access		6.25 (0.90 to 43.15)	0.10
Patient's symptoms			
Positive symptoms		0.91 (0.24 to 3.48)	0.585
Negative symptoms		1.76 (0.46 to 6.69)	0.312
Cognitive symptoms		0.91 (0.21 to 3.81)	0.603
Aggression		43 (0.05 to 3.65)	0.383
Major depressive episode	4		
A medical problem of caregiver		0	0.028
Dysthymia	6		
Levels of relationship in family		24.0 (0.78 to 732.4)	0.031

dysthymia (6 people; 6.8%). Moreover, 5 out of the 88 caregivers (5.7%) had suicidal ideation, of which 4 were at the low-risk level and 1 was at the high-risk level. None of the caregivers abused, or were dependent on, alcohol.

Table 3 demonstrated the association between the risk factors and depression among the caregivers of the schizophrenic patients. It was found that caregivers' depression was associated with two factors: insufficient monthly income (OR 5.11, 95% CI 1.20 to 21.64; $p = 0.037$), and medical problem of the caregivers (OR 16.07, 95% CI 1.93 to 133.51; $p = 0.001$). In the case of major depressive episodes, there was only one associated factor, which was a medical problem of the caregivers ($p = 0.028$). As for dysthymia, it was

associated only with the levels of relationship in the family (OR 24, 95% CI 0.78 to 732.4; $p = 0.031$). Moreover, it was found that the suicidal ideation of the caregivers was associated with depression and major depressive episodes (OR 51.33, 95% CI 4.92 to 534.76; $p \leq 0.001$; and OR 123, 95% CI 8.5 to 1763.05; $p \leq 0.001$, respectively).

Discussion

Using a questionnaire based on the MINI-Thai version, the present study found that the prevalence of depression among the caregivers of schizophrenic patients was 11.4% or 10 people. This was further classified as a major depressive episode in the case of 4 caregivers (4.5%), and dysthymia for the

remaining 6 individuals (6.8%). A study by Kongsuk⁽¹⁵⁾ found that the prevalence of major depressive disorders in the general Thai population was 3.1%. This could implied that in the caregivers of patients with schizophrenia were more likely to suffer from depression than the general population. The proportion of depression found in the present study illustrated similarities with previous studies in foreign countries^(7,16), which found that the prevalence of depression among caregivers was 6% and 18%, respectively. However, a study by Osman⁽⁷⁾ found an incidence of only 1% for dysthymia, which is noticeably lower than that found in the present study (6.8%). The other factors in each country that may influenced the differences in the prevalence of dysthymia should be the focus of further studies.

The results of the present study's analysis found that there were two factors associated with depression among the caregivers of patients with schizophrenia, namely, insufficient monthly income, and medical problem of the caregiver. The finding of insufficient monthly income was found consistent with previous studies^(17,18), which identified poverty as a factor that can lead to depression. In addition, caregivers with medical problems were at more risk of depression than caregivers without medical problems. The medical problems of caregivers were mainly hypertension and hypercholesterolemia. This study's results found consistency with Beck⁽¹⁹⁾, who explained that health issues could have high impact on caregivers. In particular, Beck identified that those caregivers who have medical problems as well as the increased burden from attending to the patients were at risk of experiencing decline in their own health care. Subsequently, they may experienced having negative thoughts which may lead to depression. Similarly, Leejongpermpoon⁽²⁰⁾ found that caregivers with medical problems had a higher risk for depression.

The present study also contained limitations. Firstly, some caregivers were not only taking care of the patients with schizophrenia but also other members of the family who lived in the same house, such as a child and/or an older relative.

Secondly, the size of the sample was small in relative to the number of the factors associated with depression among caregivers of patients with schizophrenia. The sample size of this study was calculated in accordance with the main objective-to survey the prevalence of depression among caregivers. Thus, it did not have the power to cover all of factors that are associated with depression among caregivers

of schizophrenic patients. Therefore, the results of this study need to be considered carefully, and there should be a more-focused study on the factors associated with depression among the caregivers of patients with schizophrenia.

Conclusion

It is important to be aware of the risks for depression among the caregivers of schizophrenic patients. The caregivers should be given empathy and protected against the risk factors that can result in depression, especially made aware of risks from insufficient monthly income and personal medical problems would be beneficial.

What is already known on this topic?

There have been several previous studies in other countries about depression among the caregivers of schizophrenic patients. Most researches in Thailand about depression among caregivers of schizophrenic patients were focused on screening for depression, but has not evaluated the symptoms of depression according to the diagnostic criteria of DSM-IV-TR.

There are several factors associated with depression that are evident among caregivers of schizophrenic patients.

What this study adds?

The present study added an interview for evaluating the symptoms of depression according to the diagnostic criteria of DSM-IV-TR by semi-structured interview diagnostic criteria of depression, based on the MINI-Thai version. The prevalence of depression among the caregivers of schizophrenic patients in the present study was 11.4%. Insufficient monthly income and medical problems of caregivers were significant risk factors associated with depression among the caregivers of schizophrenic patients.

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Potential conflicts of interest

None.

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