

Original article

Prevalence of and Factors Associated with Depression in Patients with Schizophrenia in a University Hospital: A Post-hoc Analysis

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Abstract

Objectives This study was aimed to assess the prevalence of depression and identify factors associated with depression in patients with schizophrenia in a university hospital.

Methods This was a post-hoc analysis of a cross-sectional study conducted in 75 patients with schizophrenia. Major depressive episodes were diagnosed according to DSM-IV-TR. The six social support deficits (SSDs) scale was used to identify social support deficits. Chi-square and logistic regression were used to determine factors associated with depression.

Results The prevalence of depression was 16.0%, with only 25.0% of them previously being recognized and treated with antidepressants. Age, sex, marital status, income, duration of illness, type of antipsychotic drugs and number of side effects were not significantly associated with depression. Three out of six social support deficits were associated significantly with depression, including living alone, reciprocity in the family, and dissatisfaction with family support, with odds ratios of 10.0, 4.9 and 8.6, respectively. Those with at least one social support deficit were 9.3 times more likely to be depressed than those without one ($p=0.002$).

Conclusion This study suggested that depression in patients with schizophrenia was still under recognized by Thai psychiatrists. The findings do not support the hypothesis that depression is more common in patients receiving typical antipsychotic drugs. Psychosocial factors such as social support deficits were found to have a higher impact on depression than biological ones in Thai patients with schizophrenia. **Chiang Mai Medical Journal 2011;50(4):115-121.**

Keywords: depression, schizophrenia, prevalence, antipsychotic drugs, side effect, social support

Schizophrenia is a chronic psychotic illness characterized by delusions (fixed false believes), hallucinations (perceptions without sensory stimuli), disorganized speech, and dis-

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organized/catatonic behavior. Depression is common in the course of schizophrenia. The point prevalence of major depressive episodes in schizophrenia ranges widely from 10% to 83% depending on the clinical setting, assessment, duration of study, and characteristics of the study population.^(1,2) However, it is under recognized and untreated frequently.

Bartels and Drake (1988) categorized depressive symptoms in schizophrenia into three subtypes; (1) depressive symptoms secondary to organic factors (caused by medications, substance abuse, or underlying medical problems), (2) nonorganic depressive symptoms occurring with an acute psychotic episode, and (3) nonorganic depressive symptoms occurring without acute psychotic symptoms (such as prodromal, post-psychotic, and negative symptoms).⁽³⁾ However, in 2011, Felmet *et al*, reviewed the origin of depressive symptoms and concluded that they may be the result of: 1) a core component of schizophrenia, like positive and negative symptoms; 2) an expression of severe psychosis; 3) a major depressive episode after a psychotic episode comprising post-psychotic depression; or 4) the result of typical antipsychotic drugs.⁽⁴⁾

Several factors were found to relate to depression in schizophrenia, including: physical illness, quality of life, presence of positive symptoms, proportion of confidence, coping by use of medications, and managing conflicts by keeping calm.⁽⁵⁾ Furthermore, it was found that depression in schizophrenia leads to impairment, decreased functioning, re-hospitalization and suicide.⁽⁶⁻⁹⁾

Typical antipsychotic drugs have been known to associate with depression in schizophrenia through decreasing dopamine

in the prefrontal cortex. Atypical antipsychotic drugs, in contrast, increase the release of dopamine, thus improving psychomotor activity, motivation, pleasure and appetite.⁽¹⁰⁾ Also, atypical antipsychotic drugs affect serotonin receptors (5-HT_{2A} and 5-HT_{2C} receptors), therefore, advantage in decreasing depressive symptoms.⁽¹⁰⁾

Social support deficit is another important risk factor in depression and suicide in schizophrenic patients.⁽¹¹⁾ Social support can increase self-esteem, coping skills, and resilience, as well as decrease the experienced stigma,⁽¹²⁾ which may result in lower risks of depression in schizophrenic patients. This paper focused on Thai culture, in which schizophrenic patients generally live with their family members, and they commonly receive both financial and emotional support from them.

Little is known about the prevalence of and factors associated with depression in patients with schizophrenia, especially in Asian countries, where typical antipsychotic drugs with depressogenic effects are still commonly used, and social support is considered to be imperative. The objectives of this analysis were:

1. To identify the point prevalence of depression in patients with schizophrenia in a university hospital.
2. To assess the association of type of antipsychotic drugs, number of side effects and social support deficit with depression in patients with schizophrenia in a university hospital.

This study hypothesized that depression in patients with schizophrenia is associated with typical antipsychotic drugs, higher number of side effects, and social support deficits.

METHODS

This was a post-hoc analysis of a cross-sectional study conducted on 75 participants at an outpatient clinic of a university hospital in Chiang Mai, Thailand. The main objective was to identify factors associated with non-adherence to antipsychotic drugs in patients with schizophrenia from results published elsewhere.^(13,14) The inclusion criteria were Thai-speaking, aged 18 years or over, diagnosed as schizophrenia according to DSM-IV-TR,⁽¹⁵⁾ and receiving oral antipsychotic drugs. The exclusion criterion was receiving depot antipsychotic drugs within the past month.

Major depressive episodes were diagnosed by psychiatrists according to DSM-IV-TR. The diagnostic criteria for major depressive disorder included depressed mood or loss of interest for at least 2 weeks, accompanied by weight loss or weight gain, insomnia or hypersomnia, psychomotor agitation or retardation, loss of energy, worthlessness, diminished ability to think, and recurrent thoughts of death.⁽¹⁵⁾ The six social support deficits (SSDs) scale was used to identify social support deficits,⁽¹⁶⁾ which are defined as follows:

1. Living alone without a child or other relative.
2. Seeing a child or other relatives less than once a week.
3. Lack of reciprocity with neighbours, by asking how much neighbours depend on each other in the patients village.
4. Lack of reciprocity between children and extended family members, by asking how much children and relatives care about each other.
5. Relationship difficulties with one or more relatives, through asking about severe

problems in those between the participant and any of their children or relatives that lasted more than a few weeks in the last year.

6. Dissatisfaction with support from children.

Chi-square was used to determine factors associated with depression. Logistic regression was used to analyze the association between type of antipsychotic drugs, number of side effects, social support, and depression. The statistical significance was defined as p -value <0.05 .

The study received prior ethical approval from the Ethics Committee, Faculty of Medicine, Chiang Mai University (No.383/2552). Each patient gave written informed consent prior to participation.

RESULTS

The mean age of the 75 participants in this study was 46.0 ± 13.6 years, and from them, 26 (34.7%) were male, 23 (30.7%) were married, 33 (44.0%) had no income, 38 (50.7%) had been diagnosed with schizophrenia for more than ten years, 38 (50.7%) were using typical antipsychotic drugs and 44 (58.7%) had at least one side effect. The prevalence of depression in this study was 16.0%. Only 25.0% of those patients were recognized and treated previously with antidepressants. Gender, age, marital status, income, duration of illness, type of antipsychotic drugs and number of side effects were not significantly associated with depression (Table 1).

Three out of six social support deficits were associated significantly with depression, including living alone, reciprocity in the family and dissatisfaction with family support. Forty-three percent of the partici-

Table 1. Baseline characteristics and depression in patients with schizophrenia

Baseline characteristics	Total (N=75) n (%)	Group comparisons		p-value
		Non-depressed (N=63) n (%)	Depressed (N=12) n (%)	
Gender				
Male	26 (34.7)	20 (31.7)	6 (50.0)	0.223
Female	49 (35.3)	43 (68.3)	6 (50.0)	
Age				
≤40	28 (37.3)	21 (33.3)	7 (58.3)	0.101
>40	47 (62.7)	42 (66.7)	5 (41.7)	
Marital status				
Married	23 (30.7)	19 (30.2)	4 (33.3)	0.684
Single, widowed or divorced	52 (69.3)	44 (69.8)	8 (66.7)	
Income (baht/month)				
No income	33 (44.0)	27 (42.8)	6 (50.0)	0.369
≤10,000	24 (32.0)	19 (30.2)	5 (41.7)	
>10,000	18 (24)	17 (27.0)	1 (8.3)	
Duration of illness				
0-10 years	37 (49.3)	30 (47.6)	7 (58.3)	0.471
More than 10 years	28 (50.7)	33 (52.4)	5 (41.7)	
Antipsychotic				
Typical	38 (50.7)	31 (50.8)	7 (58.3)	0.562
Atypical	37 (49.3)	32 (49.2)	5 (41.7)	
Number of side effects				
0-1	31 (41.3)	28 (44.4)	3 (25.0)	0.210
More than 1 side effect	44 (58.7)	35 (55.6)	9 (75.0)	

pants had at least one social support deficit. Those with at least one social support deficit were 9.3 times more likely to be depressed than those without one ($p=0.002$) (Table 2).

DISCUSSION

The findings of this study do not support the hypothesis that depression is associated with receiving typical antipsychotic drugs and the number of side effects. Johnson (1981) proposed that an important part

of depression in schizophrenia is not drug related, as drugs could be a cause in only 10% of depressed cases.⁽¹⁷⁾ Also, Aguilar and Siris (2007) suggested that the association between antipsychotic drugs and depression in schizophrenia is not the general rule, since depressive symptoms are present frequently before initiation of antipsychotic drugs, and both typical and atypical antipsychotic drugs have been found to have antidepressive properties.⁽¹⁸⁾ Another explanation is that perphenazine was the most commonly typical antipsychotic drug used in this

Table 2. The association between social support deficit and depression in schizophrenia

Six social support deficits	n (N=75)	Depressed N (%)	Odds ratio	p-value
Living alone	7	4 (57.1)	10.0	0.002
Seeing a relative less than once a week	10	5 (50.0)	6.1	0.118
Lack of reciprocity with neighbours	8	2 (25.0)	1.9	0.463
Lack of reciprocity between extended family members	7	3 (42.9)	4.9	0.042
Difficulty in relationships with one or more relatives	9	2 (22.2)	1.6	0.587
Dissatisfaction with support from family	7	4 (57.1)	8.6	0.011
Number of social support deficits				
No social support deficit	43	2 (4.7)	1.0 (Ref.)	
At least one social support deficit	32	10 (31.3)	9.3	0.002

setting. It is a antipsychotic drug with medium potency and relatively low extrapyramidal side effects, and thus unlikely to cause depression via extrapyramidal side effects.

Living alone was found to be associated highly with depression in schizophrenia. This finding fell in line with a previous systematic review, which reported that living alone increases the risk of suicide in patients with schizophrenia.⁽¹⁹⁾ Cohen *et al*, (1997) investigated subjective well-being in patients having schizophrenia with depression, and found that absence of loneliness and reliable social contacts were predictors for subjective well-being. Additionally, Kudo *et al*, (2002) stated that feelings of loneliness experienced by patients with schizophrenia in the early remission phase are advantaged by having a “partner for even a little protection against loneliness”.⁽²⁰⁾ Living alone as well as other social support deficits might lead to depression in schizophrenia via decreasing self-esteem, increasing social anxiety and stressful life events.⁽²¹⁾ Furthermore, inducing a sense of worthlessness was reported as one of the most robust findings associated with

suicide in patients with schizophrenia.⁽¹⁹⁾

Some limitations should be considered when interpreting findings from this study. Firstly, this post-hoc analysis of a cross-sectional study cannot provide direct evidence of causality. Indeed, potentially complex bi-directional inter-relationships may underlie the observations. Social support deficits might result in depression, which may in turn, lead to a deterioration in social support. Secondly, it should be noted that the social support deficit scale was developed to assess social support deficit in older adults, and therefore, measurement error might have occurred through its adaptation to a different sample. Thirdly, the small sample size might limit the positive findings in this study. In addition, the particular sample characteristics from a university hospital in Thailand might reduce generalization of other persons with schizophrenia in different settings.

This study suggested that depression in patients with schizophrenia was common, but still under recognized by Thai psychiatrists. Furthermore, social support is crucial in dealing with depression in schizophrenia.

Future research, with a larger number of patients with schizophrenia or other psychotic disorders, is necessary in a community setting for a better understanding of depression in patients with schizophrenia.

In conclusion, this study suggested that psychosocial factors, such as social support deficits, might have a higher impact on depression than biological ones in Thai patients with schizophrenia. Enhancing social support, as well as early detection of depression, should be emphasized in intervention to reduce depression in patients with schizophrenia.

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ความชุกและปัจจัยที่สัมพันธ์กับภาวะซึมเศร้าในผู้ป่วยโรคจิตเภทใน โรงพยาบาลมหาวิทยาลัย: การวิเคราะห์ข้อมูลย้อนหลัง

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บทคัดย่อ

วัตถุประสงค์ เพื่อประเมินความชุกของภาวะซึมเศร้าและปัจจัยที่สัมพันธ์กับภาวะซึมเศร้าในผู้ป่วยโรคจิตเภทในโรงพยาบาลมหาวิทยาลัย

วิธีการ การศึกษานี้เป็นการวิเคราะห์ข้อมูลย้อนหลังจากการศึกษาแบบตัดขวางในผู้ป่วยโรคจิตเภทจำนวน 75 ราย ภาวะซึมเศร้าได้รับการวินิจฉัยตาม DSM-IV-TR และการขาดแคลนการสนับสนุนทางสังคม ประเมินโดยแบบประเมิน six social support deficits (SSDs) สถิติที่ใช้ในการวิเคราะห์ ได้แก่ chi-square และ logistic regression

ผลการศึกษา ความชุกของภาวะซึมเศร้าในผู้ป่วยโรคจิตเภทเป็นร้อยละ 16 ในจำนวนนี้มีเพียงร้อยละ 25 เท่านั้นที่ได้รับการรักษาด้วยยาต้านเศร้าอยู่ การศึกษาไม่พบว่าชนิดของยาต้านโรคจิตหรือจำนวนผลข้างเคียงสัมพันธ์กับภาวะซึมเศร้า แต่พบว่าการอาศัยอยู่คนเดียว การที่ญาติพี่น้องไม่ดูแลเอาใจใส่กันและกัน และการไม่พึงพอใจกับความช่วยเหลือต่างๆ ที่ได้รับจากญาติพี่น้องสัมพันธ์กับภาวะซึมเศร้าที่ค่า odds ratio เท่ากับ 10.0, 4.9 และ 8.6 ตามลำดับ นอกจากนี้ผู้ที่มีการขาดแคลนการสนับสนุนทางสังคมอย่างน้อยหนึ่งข้อ มีโอกาสที่จะซึมเศร้ามากกว่าผู้ที่ไม่มีการขาดแคลน 9.3 เท่า ($p=0.002$)

สรุป ภาวะซึมเศร้าในผู้ป่วยโรคจิตเภทส่วนใหญ่ไม่ได้รับการรักษา และการขาดแคลนการสนับสนุนทางสังคมมีผลต่อภาวะซึมเศร้าในผู้ป่วยโรคจิตเภทชาวไทยมากกว่าปัจจัยทางด้านชีวภาพ *เชียงใหม่เวชสาร* 2554;50(4):115-121.

คำสำคัญ: ภาวะซึมเศร้า โรคจิตเภท ความชุก ยาต้านโรคจิต ผลข้างเคียงของยา การสนับสนุนทางสังคม