

Suicidality and associated social, demographic and clinical factors in Thai patients with acutely treated depressive disorder: a cross-sectional study

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Research article

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Abstract

Background Some depressed people die by suicide although they are in treatment. The aims of this study were to examine the prevalence of suicidality and to identify the associated social, demographic and clinical factors in Thai patients with acutely treated depressive disorders.

Patients and methods A sample of 178 in- and outpatients with depressive disorders who were treated within the six-month period of being diagnosed or of a recurrent episode were recruited from a tertiary hospital during November 2017 to April 2018. The associations between suicide risks assessed using the suicidality module of the Mini-International Neuropsychiatric Interview (MINI) and various factors including demographic data, depressive severity, interpersonal problems, social support, family relationships, and life stress events were analyzed by chi-square test. Logistic regression was used for identification of the potential predictors of moderate-to-high suicide risk.

Results Most of the subjects were single (80.9%), female (68%), and in early adulthood (mean age 28.9, SD 11.2). The prevalence of suicidal ideation, suicide attempt within one month, and previous history of suicide attempt during lifetime were 62.4%, 35.4% and 41%, respectively. The prevalence of suicidality (76.4%) and moderate-to-high suicide risk (48.4%) were high. The factors associated with moderate-to-high suicide risk were lower age, no religion, unemployment, history of substance use within one year, moderate-to-severe level of depression, being an in-patient, short duration of treatment, receiving benzodiazepines, having interpersonal role disputes, having interpersonal deficits, low social support, poor family relationships and functioning, and high severity level of health stress events. Potential predictors of moderate-to-high suicide risk were moderate-to-severe levels of depression, poor family relationships and functioning, age of 20 or lower, being an in-patient, and receiving benzodiazepines.

Conclusion The prevalence of suicidality in patients with acutely treated depressive disorder was found to be high. Depressive severity and social factors such as poor family relationships were highly associated with suicide risk. Knowledge of these factors may raise awareness of suicide prevention during the course of treatment of depression.

Introduction

Suicide is considered a problem not only for individuals but also for family, society and public health. According to a report from the World Health Organization [1], there were an estimated 7.39 hundred thousand suicide deaths worldwide in 2016. In Thailand, the completed suicide rate in 2015 was 6.47 per a hundred thousand, and there has also been an increase in this trend over the last 10 years [2]. Persons who have a risk of suicide generally have genetic vulnerability, diagnosed mental illness, social isolation and impulsiveness [3]. Psychosocial stressors are also found to be associated with suicide, for example, perceived social support, life stress events and poor family communication [4, 5]. Reports from psychological autopsies demonstrate that more than half of suicidal individuals have depression [6].

Depressive disorder is a common psychiatric illness that has a lifetime prevalence of up to 20% [7] and leads to the disruption of many aspects of life.

Interestingly, psychological autopsies indicate 44% of completed suicides are individuals who underwent psychiatric or psychosomatic treatment within a month prior to suicide [8], and 22% within three months [9]. This reminds health care professionals to be aware of patients' suicide risk, even during treatment. As more than 50% of psychiatrists who lost their patients by suicide reported sadness, depression, hopelessness and guilt [10], anyone would want to prevent these events from occurring.

Past studies have shown various levels of prevalence of suicidality in patients with depressive disorders, ranging from 32–62% [11–13] depending on the various sites and samples' characteristics. The median duration of the depressive episodes found in the previous research ranged from 1 month to 6 months [14–16]. This could be an essential period of time when there is a need to be focused on assessing suicide risk and to provide intensive intervention to prevent suicidal behaviors.

There is limited data regarding the suicidality of patients with depressive disorders who are currently in acute treatment. Past studies included depressed patients in various phases of treatment, such as remission and recovery, which may affect their suicidality rate. The aim of this study was to examine the prevalence of suicidality and the related social, demographic and clinical factors in Thai patients with acutely treated depressive disorders, which may help us to better understand the situation of suicide in Thailand and to improve the quality of care, which may lead to more effective suicide prevention for this high risk population.

Material And Methods

Setting and Participants

This cross-sectional descriptive study was carried out from November 2017 to April 2018. All of 178 participants were recruited from the in- and outpatient psychiatric clinic of King Chulalongkorn Memorial Hospital, a tertiary hospital in Bangkok, Thailand. The inclusion criteria were 1) age 18 years and older, 2) was diagnosed with a "major depressive disorder" or "persistent depressive disorder" (using the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition) and was treated within the 6-month period of being diagnosed or of a recurrent episode, 3) able to communicate by listening, reading and writing and 4) received informed consent. The patients were excluded from the study if they were diagnosed as having a "bipolar disorder" or "dementia". Psychotic disorders including schizophrenia, schizoaffective disorder and delusional disorder were also excluded. This study was approved by the Ethics Committee, the Institutional Review Board of the Faculty of Medicine, Chulalongkorn University.

Assessment

After the patients were informed of the objectives and methods of the study, they were asked to complete the demographic questionnaire. The clinical and treatment history in patients' medical records were

reviewed. Their suicidality was assessed using semi-structured interviews according to the suicidality module of the Mini International Neuropsychiatric Interview (MINI) Thai version which had good inter-rater reliability (Cohen's kappa = 0.86), good sensitivity (0.96) and specificity (0.91) compared with a psychiatrist's interview [17]. The suicidal ideation, suicidal plans, attempted suicide during the past month and any past suicide attempts were asked about. The total scores categorized patients' current suicide risks into absent (0), low (1–8), moderate (9–16) and high risk (17 or higher). Patients' suicidality was presented when the score was higher than zero. The presence of any levels of suicide risk were reported to the doctors, and thus the appropriate interventions were given to the patients. Finally, depressive severity and social factors were evaluated by self-report questionnaires as follows.

1) The Beck Depression Inventory-II (BDI-II) Thai version, a widely used questionnaire for assessment of the severity of depression, was developed from its original version in English [18] and consists of 21 questions with a total score of 63. The severities of depression were categorized into minimal (0–13), mild (14–19), moderate (20–28) and severe depression (29–63). The test showed good internal consistency (Cronbach's alpha coefficient, $\alpha = 0.91$) and the Spearman's correlation coefficient, which indicated the relationship between the score obtained from this BDI-II and the Hamilton Rating Scale for Depression, was 0.71.

2) The Thai Interpersonal Questionnaire [19] was developed from the interpersonal psychotherapy manual [20] to assess four interpersonal problem areas (grief or complicated bereavement, interpersonal role disputes, role transitions, and interpersonal deficits). The questionnaire showed good internal consistency in each subscale ($\alpha = 0.79–0.96$). The range of scores on each area was equally divided into three intervals. Those who had the scores on the second and third intervals indicated adjustment problems.

3) The Social Support Questionnaire was developed from Schaefer's concept of social support [21]. This 16-item instrument examines three subscales of social supports: emotional, informational and tangible or material support. High scores indicate good social supports. The questionnaire had good internal consistency in each subscale ($\alpha = 0.87–0.91$)

4) The Family Relationship and Functioning Questionnaire was developed by Lueboonthavatchai [22] and has been tested for validity and reliability ($\alpha = 0.93$). The questionnaire consists of seven questions, and a higher total score indicates good family relationships and functioning.

5) The 1-Year Life Stress Event Questionnaire was developed and adapted to the Thai way of life by Nakarapanich [23] based on Holmes and Rahe's approach [24], and consists of 43 life stress events which are categorized into five domains, including health, family, economics, work, and social events. Each event has different severity scores, and a higher total score indicates more severe life stress. The tool was tested for good reliability ($\alpha = 0.97$).

The total scores from the Social Support Questionnaire, the Family Relationship and Functioning Questionnaire and the 1-Year Life Stress Event Questionnaire were divided into groups by means \pm SD.

Statistical analysis

The data were analyzed using SPSS version 22.0 software. The prevalence of suicidality was presented in proportion and percentage. Two groups of depressed patients, 1) absent-to-low suicide risk and 2) moderate-to-high suicide risk, were compared on various factors by chi-square test. Significant factors from the theoretical review and univariate analysis were entered into a binary logistic regression model for identifying the potential predictors of moderate-to-high suicide risk. A p-value of less than 0.05 was considered statistically significant.

Results

There were 178 participants, aged 18–63 years in the study. From the total, 77 of them (43.3%) were in the age range of 21–30 years. Most of the patients were female (68%), single (80.9%), Buddhist (83.7%), had at least bachelor's degree (61.2%) and were unemployed (60.7%). The most common occupations were employee (20.8%), personal business (11.2) and government official (6.2%). Moreover, 73.6% of them earned income and the median income was 10,000 baht per month. A percentage of 53.9% of the participants had at least one medical illness, of which the three most common were allergy, gastrointestinal disease and migraine, respectively. Some of them (35.6%) had a history of substance use within one year, of which alcohol (33.1%), nicotine (13.5%) and cannabis (3.4%) were the most common. In terms of clinical characteristics, the majority of the patients were in the outpatient clinic (92.7%), diagnosed with a major depressive disorder (86.5%) or with severe depression (50.6%). The median number of medications they received was two (ranging from 1 to 4), and most of them receive SSRIs (78.1%) and benzodiazepines (68.0%) (Table 1). The mean scores from each questionnaire for the assessment of social factors are shown in Table 2.

Table 1

Demographic data and clinical characteristics of participants

Demographic data and clinical characteristics	N (%) or Mean \pm SD	Demographic data and clinical characteristics	N (%) or Mean \pm SD
- Sex	121 (68)	-Setting of treatment	165 (92.7)
Female	57 (32)	Outpatient	13 (7.3)
Male	28 \pm 11	Inpatient	154 (86.5)
-Age (years)	(18,63)	-Diagnosis	126 (70.8)
(min, max)	144 (80.9)	Major depressive disorder	28 (15.7)
-Marital status	30 (16.9)	First episode	17 (9.6)
Single	4 (2.2)	Recurrent episode	7 (3.9)
Married	149 (83.7)	Persistent depressive disorder	9 (5.1)
Widowed or Divorced	6 (3.4)	(dysthymia)	22 (12.4)
-Religion	4 (2.2)	Double depression	57 (32.0)
Buddhism	19 (10.7)	-Depressive severity (BDI-II)	90 (50.6)
Islam	70 (39.3)	Minimal depression	27.09 \pm
Christianity	108 (60.7)	Mild depression	13.51
No religion	47 (26.4)	Moderate depression	(1,53)
-Occupations	10000	Severe depression	173 (97.2)
Employed	(0,75000)	Mean \pm SD	121 (68.0)
Unemployed	69 (38.8)	(min, max)	30 (16.9)
-Income (baht/month)	109 (61.2)	-Received psychotropic	7 (3.9)
No income	96 (53.9)	medication	6 (3.4)
Median (min, max)	64 (35.6)	Antidepressants	44 (24.7)
-Education		Benzodiazepines	47 (26.4)
High school and lower		Atypical antipsychotics	87 (48.9)
Bachelor and higher		Anticonvulsants	11.28 \pm 8.4
-Medical comorbidity		Others	8
-History of substance use within		-Duration of treatment (months)	
one year		< 1	
		1-2	
		> 2-6	
		Mean \pm SD, (weeks)	
		Median (weeks)	

Abbreviations: BDI-II, Beck Depression Inventory II

Table 2
Social factors of participants

Social factors	Mean ± SD (min,max)
Interpersonal problem areas	5.20 ± 4.32 (0,12)
Grief and complicated bereavement	7.51 ± 4.44 (0,15)
Interpersonal role disputes	3.20 ± 3.12 (0,9)
Role transition	5.08 ± 3.01 (0,12)
Interpersonal deficits	
Social support	53.35 ± 11.37 (20,80)
Overall	24.11 ± 5.63 (10,35)
Emotional	12.48 ± 3.72 (4,20)
Informational	16.76 ± 4.56 (5,25)
Tangible or material	
Family relationships and functioning	22.78 ± 6.66 (8,35)
1-year life stress event severity	43.34 ± 26.41 (0,159.64)
Overall	15.71 ± 6.27 (0,26.74)
Health	8.73 ± 11.81 (0,48.39)
Family	7.18 ± 8.26 (0,38.27)
Economics	9.19 ± 9.79 (0,49.03)
Work	2.53 ± 4.69 (0,24.01)
Social	

The prevalence of suicidal ideation, suicidal plans, suicide attempt within one month and past suicide attempt were 62.4%, 29.2%, 35.4% and 41.0%, respectively. Suicidality was presented in the majority of the patients (76.4%), and 83 patients (46.6%) were classed as having high suicide risk (Table 3).

Table 3
Suicidality

Suicidality in the past month	n	%
Thought of death	115	64.6
Suicidal ideation	111	62.4
Suicidal plan	52	29.2
Non-suicidal self-injury	59	33.1
Suicide attempt	63	35.4
Lifetime suicide attempt	73	41.0
Current suicide risk	42	23.6
Absent risk	32	18.0
Low risk	21	11.8
Moderate risk	83	46.6
High risk		
Mean ± SD = 16.49 ± 15.20, Min = 0, Max = 52		

The associated demographic and clinical factors of moderate-to-high suicide risk were age of 20 or lower ($p < 0.05$), no religion ($p < 0.05$), unemployment ($p < 0.05$), history of substance use within one year ($p < 0.05$), moderate-to-severe depression ($p < 0.01$), being an in-patient ($p < 0.05$), shorter duration of treatment ($p < 0.05$) and receiving benzodiazepines ($p < 0.05$). Regarding the social factors, it was found

that interpersonal role disputes ($p < 0.01$), interpersonal deficits ($p < 0.05$), low social supports ($p < 0.05$), poor family relationships and functioning ($p < 0.01$), and high severity of health stressful events ($p < 0.05$) were associated with moderate-to-high suicide risk (Table 4).

Table 4
Factors associated with suicide risk

Factors	Suicide risk				p-value	
	Absent-to-low		Moderate-to-high			
	n	%	n	%		
Gender	26	45.6	31	54.4	0.564	0.453
Male	48	50.3	73	60.3		
Female						
Age (years)	11	26.2	31	73.8	5.355	0.021*
≤ 20	63	46.3	73	53.7		
> 20						
Marital status	57	38.5	91	61.5	3.384	0.066
Single/divorced/widowed	17	56.7	13	43.3		
Couple						
Religion	71	44.7	88	55.3	5.822	0.016*
Yes	3	15.8	16	84.2		
No						
Occupation	37	34.3	71	65.7	6.048	0.014*
Unemployed	37	52.9	33	47.1		
Employed						
Substance use within one year	55	48.2	59	51.8	5.812	0.016*
No	19	29.7	45	70.3		
Yes						
Setting of treatment	73	44.2	92	55.8	6.628	0.010*
Outpatient	1	7.7	12	92.3		
Inpatient						
Depressive severity	26	83.9	5	16.1	27.649	< 0.001**
Minimal-to-mild	48	32.7	99	67.3		
Moderate-to-severe						
Number of psychotropic medications	65	49.2	67	50.8	12.369	< 0.001**
1-2	9	19.6	37	80.4		
3-4						
Receiving benzodiazepines	31	54.4	26	45.6	5.667	0.017*
No	43	35.5	78	64.5		
Yes						
Duration of treatment	12	27.3	32	72.7	4.921	0.027*
< 1 month	62	46.3	72	53.7		
≥ 1 month						

Note: *p < 0.05, **p < 0.01

Factors	Suicide risk				p-value	
	Absent-to-low		Moderate-to-high			
	n	%	n	%		
Grief and complicated bereavement	31	44.9	38	55.1	0.522	0.470
No	43	39.4	66	60.6		
Interpersonal role disputes	25	65.8	13	34.2	11.665	0.001**
No	49	35.0	91	65.0		
Role transition	44	48.4	47	51.6	3.522	0.061
No	30	34.5	57	58.4		
Interpersonal deficits	27	54.0	23	46.0	4.421	0.036*
No	47	36.7	81	63.3		
Overall social support	58	38.4	93	61.6	4.099	0.043*
Low	16	59.3	11	40.7		
Family relationships and functioning	52	35.1	96	64.9	14.984	< 0.001**
Poor	22	73.3	8	26.7		
Severity of 1-year health stress event	16	59.3	11	40.7	4.099	0.043*
Low	58	38.4	93	61.6		
Note: *p < 0.05, **p < 0.01						

After performing the univariate analysis, statistically significant factors ($p < 0.05$) were entered into the logistic regression analysis by backward likelihood ratio, and five remaining potential predictors of moderate-to-high suicide risk were found: moderate-to-severe depression ($p < 0.01$), poor family relationships and functioning ($p < 0.01$), age of 20 or lower ($p < 0.05$), being an in-patient ($p < 0.05$) and receiving benzodiazepines ($p < 0.05$) (Table 5).

Table 5
Stepwise multiple logistic regression

Factors	Adjusted OR	95% CI of adjusted OR		p-value
		Lower	Upper	
Age of 20 or lower	3.23	1.24	8.43	0.017*
No religion	4.06	0.76	21.62	0.101
Being an inpatient	19.33	1.98	188.58	0.011*
Receiving benzodiazepines	2.49	1.12	5.53	0.025*
Moderate-to-severe depression	10.45	3.12	34.99	< 0.001**
Having interpersonal role disputes	2.32	0.87	6.15	0.091
Poor family relationships and functioning	5.82	1.93	17.51	0.002**
Note: *p < 0.05, **p < 0.01				
Abbreviations: OR, odds ratio				

Discussion

Based on the demographic data, most of the patients in this study were single, female, in early adulthood, educated, Buddhist, and unemployed. With regard to the clinical characteristics, most of the patients were diagnosed as having first episode MDD with severe depression, had a median treatment duration of 8 weeks, and received a number of medications.

A total of 76.4% of the participants in this study were shown to present suicidality, which is higher than past reports in Thailand and other countries. One study found a 62.3% rate of suicidality [13], whereas another one found only 32.1% of suicidality [11] in Thai MDD patients. A study in Europe [12] found only 46.67% of suicidality in MDD patients. Prevalence of suicidal ideation (62.4%) and suicide attempt within a month (35.4%) that were found were higher than past studies in Asia. Rates of suicidal ideation reported in China [25, 26] and Singapore [27] ranged from 49–55% among MDD patients and a recent meta-analysis showed a 24% 1-month prevalence of Chinese MDD patients having suicide attempts [28]. The variation of the prevalence may be influenced by the different tools using to evaluate suicidality. The variety of inclusion criteria is another important factor. Most earlier studies recruited patients in various phases of illness including active, remission and recovery leading to less severe symptoms of depression, which was probably the reason for having lower rates of suicidality. This study included patients who were treated within the 6-month period of being diagnosed or of a recurrent episode, which was considered as an active episode of depression [14–16]. For this reason, patients were currently suffering from an active illness, which may have led to a higher severity of depression and resulted in the higher suicidality rate.

Another interesting issue is the lower mean age of the sample in this study compared with those of other studies, which may affect the level of suicidal behavior, and the results of this study also show that an age of 20 years or lower is associated with a higher level of suicide risk. Nowadays, depressive disorders can be found in the younger age groups, which is often associated with genetic factors and a family history of depression [29], can cause more severe symptoms [30], and may lead to higher rates of suicidality. A previous study found that pre-adult onset MDD patients (age lower than 18 years) were associated with a history of suicide attempts and current suicidal thoughts [31]. A consistent result was found in the recurrent MDD patients, in which the pre-adult onset group was associated with suicidality [32]. The results indicating a higher suicidality rate in the current study may be explained by the younger median age level of the sample population and the earlier age of the onset of depressive disorder.

To explain the persistence of depressive symptoms and suicidality despite being treated, first, one-third to half of patients were reported as 'treatment-resistant' in past studies [33, 34] and only two-third of patients recovered from depression within 6 months [16]. It was speculated that those non-responsive patients had a chronicity of symptoms that lead to suicidality, as shown in a study conducted in Korea [35] that found that 63% of patients presented persistent suicidality after a 12-week period of treatment. Second, the mechanisms of antidepressant treatment leading to suicide were proposed [36], for example, side effects from antidepressants and treatment inefficacy. Lastly, many psychosocial stressors were presented among suicidal groups, of which moderate-to-severe psychological distress was found to be associated with completed suicide [37]. All of these reasons may explain why individuals currently treated within a 6-month period in this study were still suicidal.

The demographic, clinical and social factors associated with moderate-to-high suicide risk that were consistently found in this current and many previous studies include being non-religious, being unemployed, having a history of substance use [3, 38–40], having a higher severity of depression [12, 38–40], being an in-patient [41], shorter duration of treatment [42], low social support, and high severity of health stress events [4, 39].

The interesting finding in terms of the associated clinical characteristics was that of benzodiazepines use. Benzodiazepines are anxiolytics that are used for relief of several symptoms, including insomnia. Recent studies reported that somatic symptoms such as insomnia are associated with suicide [43, 44]. In addition, receiving benzodiazepines may be associated with increased aggression [45] and may result in disinhibition [46], which may be the factors that contribute to suicidal behavior.

Regarding the remarkable social factors, poor family relationships and functioning were highly associated with suicide risk. This shows that family issues are the social problems that need to be focused on. In a previous study, poor family communication was associated with a history of suicide attempts in depressive disorder patients [5]. Consistent data was found in research on adolescents, in which perceptions of family functioning were associated with suicidal ideation and suicide attempts [47]. Moreover, interpersonal role disputes and interpersonal deficits, which had been previously proved to be associated with depression [48], were found to be the important issues for the suicidal group in this study.

According to Erikson's concept of development across the lifespan [49], a person in early adulthood (21–40 years of age) needs to achieve intimacy and closeness within a partnership. Most of the patients in the study were in this stage of development; therefore, the problems of interpersonal relationships are important to them, for example, an argument with their close friends, family members, colleagues or partners.

According to the results of the present study, suicidality is common among depressive disorder patients, especially in the initial 6-month period of treatment. Depressive severity and various factors including family and interpersonal problems should be assessed, particularly in early adulthood patients, when these issues are crucial. Adequate treatment of depression should be prompt, and early intervention in family and interpersonal problems may be helpful in reducing the risk of suicide.

There were several limitations in this study. First, due to the descriptive design, the associations identified did not indicate a causal relationship. Second, the samples were collected from only one hospital in Thailand, which may result in the findings not being representative of all depressive disorder patients. The influence of different sociocultural characteristics should also be considered. Lastly, other factors that may affect suicidality, such as psychiatric comorbidity and personality disorders, were not evaluated. Further investigation should be conducted in order to determine when the suicidality may decrease during the course of treatment and what types of interventions that will help to reduce the suicidality can be applied.

Conclusion

The prevalence of suicidality in patients in the first 6-month period of treatment for depressive disorders was 76.4%. Lower age, non-religion, unemployment, history of substance use within one year, moderate-to-severe depression, being an in-patient, shorter duration of treatment, receiving benzodiazepines, interpersonal role disputes, interpersonal deficits, low social supports, poor family relationships and functioning, and high severity of health stress events were associated with moderate-to-high suicide risk. Potential predictors of moderate-to-high suicide risk were moderate-to-severe depression, poor family relationships and functioning, age of 20 or lower, being an in-patient and receiving benzodiazepines.

Abbreviations

MDD

major depressive disorder

MINI

Mini-International Neuropsychiatric Interview

Declarations

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Availability of data and materials

The datasets used and analyzed during the current study are available from the corresponding author up on reasonable request.

Authors' contributions

MC was the principal investigator for the study (conception and design of the study, literature review, protocol preparation, conducting the study, data collection, data analysis, interpretation of the results, and manuscript preparation and revision). PL contributed to the conception and design, interpretation of the results, revision and approval of the manuscript.

Ethics approval and consent to participate

Ethical approval of the study was obtained from the Institutional Review Board (IRB) Faculty of Medicine Chulalongkorn University.

Participants were informed of the objectives and methods of the study and provided written consent.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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