Original Research

Effect of Psychotic Symptoms on Suicide Event in Patient with Severe Depression at Sanglah General Hospital

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Abstract

Introductions: WHO states that the suicide rate in the world is still high; most of them had a previous depressive episode. In depressed patients with psychotic symptoms, psychomotor disturbances were more severe, feelings of guilt were higher, and there was an increase in suicidal ideation and attempts. Several studies have tried to find out whether there is an influence between psychotic symptoms and the incidence of suicide in patients with depressive disorders. However, the number of available studies is still limited and controversial. The purpose of this study was to determine the effect of psychotic symptoms on the incidence of suicide in patients with major depressive disorders. **Methods:** This is an observational analysis with a case-control approach. The sample was obtained from the Udayana Psychiatric Resident Duty Report in 2019 in a purposeful manner that already met the inclusion and exclusion criteria. Test the hypothesis using chi-square and logistic regression. **Results:** A total of 70 samples were used in this study. Chi-squared showed there was a relationship between psychotic symptoms and the incidence of suicide in patients with major depression (p = 0.016). Logistic regression showed that a history of drinking alcohol (OR 55.058; CI 2.975-1018.8; p = 0.007) and psychotic symptoms (OR 9.237; CI 1.86-45.875; p = 0.007) were shown to affect the incidence of suicide in patients with major depressive disorders. **Conclusion:** There is an effect of psychotic symptoms on the incidence of depression in patients with major depressive disorders.

Keywords: Major Depressive Disorders, Psychotic, Suicide, Delusion, Depression

Introductions

The World Health Organization (WHO) estimates that around 1 million suicides occur worldwide each year [1]. According to WHO number of age-standardized suicide rate in 2016 was 10.5 per 100.000 population [2]. In 2019 approximately 800.000 people die from suicide [3]. Indonesia reported the suicide rate reached 1.6 to 1.8 per 100,000 people. Every year the suicide rate in Indonesia reaches 50 thousand people out of 220 million [4]. Psychological autopsies showed 90 percent of victims met the criteria for mental disorders at the time of the suicide attempt [5]. Of the people who had attempted suicide, most had a depressive episode [6]. Several potential risk factors promote suicide in patients with mental disorders [7]. Knowing the risk factors can provide early intervention so that the incidence of suicide can be prevented [8].

Severe depression may increase risk of suicide [9]. The risk of suicide in patients with depression is up to 20 times higher than in the normal population. Roughly half of those who commit suicide have attempted suicide at least once before. The lifetime risk of a nonfatal suicide attempt in major depressive disorder is estimated at 16%-40% [10].

Based on the classification of ICD 10 and DSM-IV, severe depression can be classified into depression with psychotic symptoms and depression without psychotic symptoms (9). Ranga et al. (1999) said about 20 percent of patients with major depressive episodes have psychotic symptoms [11]. Patients with depressive episodes may have psychotic symptoms of either hallucinations or delusions. There are significant differences between depression with and without psychotic symptoms, both in terms of genetic and environmental risk factors, symptoms, prognosis, response to therapy and mortality rates [10].

In depressed patients with psychotic symptoms, there were more severe psychomotor disturbances, higher feelings of guilt, and an increase in suicidal ideation and attempts (11). Several studies have tried to find out whether there is an influence between psychotic symptoms and the incidence of suicide in patients with depressive disorders, but the available data are still limited.

The aim of this study was to determine the effect of psychotic symptoms on the incidence of suicide in patients with major depressive episodes at Sanglah General Hospital.

Methods

This study was an observational analysis with a case-control approach. The study was conducted on patients with major depressive episodes who attempted suicide as cases and patients with depressive disorder who did not experience suicide attempts as controls. After the sample was collected, it was then traced back to find out if there were previous psychotic symptoms.

The sample was taken from the Udayana Psychiatric Resident Night Duty Report in 2019 in a purposeful manner that met the inclusion and exclusion criteria. Inclusion criteria were patients aged 12–50 years with a diagnosis of depression with or without attempted suicide. The exclusion criteria were patients with schizophrenia, schizoaffective disorder, bipolar disorder, organic mental disorder and mental retardation.

Data from medical records was collected, containing age, gender, last education, occupation, marital status, history of drinking alcohol, smoking and drugs. For the sample with attempted suicide, the mechanism of the attempted suicide was sought, as was the presence of sleep disturbances (insomnia). After the data was collected, both cases and controls were investigated to see if they had previous psychotic symptoms. The diagnosis of a depressive episode with or without psychotic symptoms was determined based on the Guidelines for Classifying the Diagnosis of Mental Disorders (PPDGJ III).

Statistical analysis using IBM SPSS Statistics version 26. Continuous data and

normally distributed data are presented in the form of mean + SD, while if not normally distributed, they are presented in the form of median and interquartile interval. Normality test using the Kolmogorov-Smirnov test. Then, categorical data is presented in the form of percentages. Hypothesis test: using the chi-square test to determine the relationship between psychotic symptoms and the incidence of suicide in patients with major depressive episodes, the odds ratio (OR) was calculated. Logistics Regression multivariate analysis was used to exclude confounding variables in the analysis.

Results

A total of 70 samples in this study consisted of 35 patients with major depressive episodes with attempted suicide as cases, and 35 patients with severe episodes without attempted suicide as controls. The two groups were adjusted for age and sex. There was no difference in the mean age of both the case (27.49 +7.426) and control (29.71 + 10.36) groups with p=0.51. The sample characteristics of each group can be seen in **Tables 1 and 2**.

Variables	Case n=35	Control n=35	
age (year), median (min-max)	25.0 (14-48)	30.0 (13-48)	p=0.51
sex, n (%)			
Male	8 (22.9%)	8 (22.9%)	
Female	27 (77.1%)	27 (77.1%)	
Occupation, n (%)			
Unemployment	6 (17.1%)	5 (14.3%)	
Student	4 (11.4%)	10 (28.6%)	
Private employees	15 (42.9%)	9 (25.7%)	
Civil servant	2 (5.7%)	3 (8.6%)	
Housewives	4 (11.4%)	4 (11.4%)	
entrepreneur	3 (8.6%)	4 (11.4%)	
overseas workers	1 (2.9%)	0 (0%)	
Education level, n (%)			
Uneducated	0 (0%)	2 (5.7%)	
Elementary school	1 (2.9%)	2 (5.75)	
Junior high school	2 (5.7%)	5 (14.3%)	
Senior high school	27 (77.1)	21 (60%)	
Bachelor	5 (14.3%)	4 (11.4%)	
Diploma	0 (0%)	1 (2.9%)	
Marital status, n (%)			
Single	19 (54.3%)	15 (42.9%)	
Married	12 (34.3%)	14 (40%)	
divorce-partner still alive	3 (2.9%)	6 (17.1%)	
partner-partner have pass away	1 (2.9%)	0 (0%)	
Alcohol, n (%)	18 (51.4%)	4 (11.4%)	
Yes	17 (48.6%)	31 (88.6%)	
No			
Smoking, n (%)	16 (45.7%)	10 (28.6%)	
Yes	19 (54.3%)	25 (71.4%)	
No			

Variables	Case n=35	Control n=35
Drugs, n (%)	3 (8.65)	3 (8.6%)
Yes	32 (91.4%)	32 (91.4%)
No		
History of Psychotic symptoms, n (%)	21 (60%)	10 (28.6%)
Yes	14 (40%)	25 (71.4%)
No		

Chi-squared analysis found there is significant relationship between psychotic symptoms and the incidence of suicide in patients with major depressive episodes (p=0.016).

Table 3 Results of chi-square Analysis of the Relationship Between Psychotic History with Suicide event

		Suicide event				P value
		Yes		**No**		
		n	%	n	%	
Psychotic symptoms	Yes	21	63.6	10	32.3	0.016
	No	14	37.8	25	64,1	
		35	50	35	50	

In this study to determine the effect of confounding variables, namely age, gender, occupation, last education, marital status, history of drinking alcohol, history of drugs, presence of psychotic symptoms and smoking history on the incidence of suicide, a multivariate analysis was carried out, namely logistic regression analysis with the results listed in **table 4**.

Table 4
Logistics Regression for Confounding Variables on Suicide attempt

Variabel	B	CI 95%	P value
Age	0.913	0.819-1.016	0.096
Sex	0.953	0.133-6.837	0.962
Occupation	1.029	0.581-1.821	0.923
Education status	1.408	0.515-3.846	0.505
Marital status	1.678	0.602-4.677	0.322
History of drinking alcohol	55.058	2.975-1018.8	0.007*
Drugs history	1.295	0.101-16.647	0.843
Psychotic symptoms	9.237	1.86-45.875	0.007*
Smoking history	0.327	0.023-4.586	0.407

CI: confident interval;

Discussions

Suicide is generally defined as an act intended to an end one's life [2, 12, 13]. An association between psychotic disorders and suicidal behavior has been identified by Bleuler since 1911. Bleuler states that "the suicidal drive is the most serious of schizophrenic symptoms."[14]. But researcher now recognize that suicidal behavior not only relate to psychotic disorders but also psychotic symptom [14].

In this study, from 70 samples, 31 people

(44.3%) had psychotic symptoms in the form of hallucinations, 17 (24.3%) and 17 delusions (24.3%). This result is also higher than the research result of Coryell et al (1984) by 25% [15]. This probably due to the influence of age because research sample age range at 12-50 years. Coryell et al (1984) stated that the 15-59 year old group had a psychotic depression rate of 34% compared to the older group of 20.8%. This is also reinforced by the research of Thakur et al (1999) where it is said that the proportion of depression with psychotic at the age of 18-39 years is 37.1% while the older group (>40 years) is 25%. This may indicate that there is an effect of age on psychotic events in depressed patients [16]. However, this study did not analyze the proportion of psychotic symptoms in depressed patients by age group.

When viewed from each group, psychotic symptoms in the case group were 21 people (60%), hallucinations were 12 people (34.3%), and delusions were 11 people (31.4%). In the control, 10 people had psychotic symptoms, 5 people (14.3%) had hallucinations, and 6 people (17.1%) had delusions. Research from Roose et al. (1984) stated that patients with depression with psychotic symptoms had a higher risk of suicide than those with hallucinatory disorders. However, these results have a weakness, namely that in the group with attempted suicide, 50% of men and 25% of controls are men [6]. In this study, gender adjustments were made, and the number was not too different. However, the results of Roose et al. (1984) are supported by Park et al. (2014), where from 966 samples, all found delusions, while hallucinations were only 16.7%, but further research is needed to find out this [17].

This study found a relationship between psychotic symptoms and the incidence of suicide in patients with major depression (p = 0.016). This result is supported by research by Roose et al. (1983), which found that there was a relationship between delusions and the incidence of suicide in patients with depression (p<0.05). Delusions can be said to be a predictor of the incidence of depression in patients with depression [6]. Different results were obtained by Black et al. (1988), who found that among 1539 patients with unipolar bipolar disorder, there was no difference in the risk of suicide between patients with psychotic symptoms and those without symptoms [18]. Robin (1986) conducted a psychological autopsy on a sample of 134 people who committed suicide in St. Louis in the 1950s. The results showed that 25 (19%) had psychotic symptoms at the time of suicide, and of the 63 samples with affective disorders 10 samples (15.9%) were psychotic [19].

Data from 10 prospective cohort studies showed there is an association between psychotic symptoms and subsequent suicidal ideation, suicidal attempts, and/or suicide death. Meta-analysis showed that patients with psychotic symptoms had a 2-fold increased risk of suicidal ideation, a 3-fold increased risk of suicide attempt, and a 4-fold increased risk of suicide death [14]. One hypothesized attempt to explain the mechanism between psychotic symptoms and suicide [20]. The direct association between psychotic symptoms and suicide states that psychotic symptoms can promote suicidal behavior (for example, hallucinations commanding the individual to harm themselves) [20]. Also, psychotic symptoms have been shown to be markers of risk for suicidal behavior in patients with suicidal ideation. For example, a study by DeVylder et al.10 showed that in a general adult population sample with suicidal ideation, additional information on depressive symptoms did not help to distinguish who among the individuals with suicidal ideation was at increased odds of suicide attempt, but the co-occurrence of psychotic symptoms did add significantly to suicide attempt prediction [21]. Meta-analysis showed a 9-fold increase in the risk of suicide attempts in patients with depression and a 15-fold increase in the risk of suicide attempts in patients with anxiety

[14].

In this study, to determine the effect of confounding variables, namely age, sex, occupation, last education, marital status, alcohol drinking history, drug history, psychotic symptoms and smoking history, on the incidence of suicide, a multivariate analysis, namely a logistic regression analysis, was carried out. The results showed that a history of drinking alcohol (OR 55.058; CI 2.975-1018.8; p = 0.007) and psychotic symptoms (OR 9.237; CI 1.86-45.875; p = 0.007) were shown to affect the incidence of suicide in patients with depression.

Isometsa et al. (1994) compared the incidence of suicide in patients with unipolar depression with psychotic and non-psychotic symptoms. The data are medical records of patients who committed suicide in Finland within 1 year. The result showed no significant difference between the two groups. The only significant difference was in the dominant alcohol use in the depression and psychotic groups (p=0.035) [22]. Meta-analysis from Gournalis et al. showed that psychotic symptoms in major depression increased the risk of suicide. This study consisted of 33,873 patients, comparing patient depression with and without psychotic symptoms [23].

Quilan et al. (1997) stated that there was an increased risk of suicide in patients with depression and psychotic symptoms, which was measured using the Suicidal Ideation Questionnaire-JR (SIQ-JR) questionnaire. From 150 samples, it was said that the psychotic group had a higher SIQ-JR value than the non-psychotic group (t = 2.42, df = 119, p = 0.017). Delusions were found in 93% of the sample with psychotic symptoms, compared to hallucinations in only 7% (17). This is probably due to the delusional process in patients with affective disorders possibly transforming into suicidal ideation and even suicide attempts [6]. However, different results were obtained in this study so further research is needed.

Conclusions

There was an effect of psychotic symptoms on the incidence of depression in patients with major depressive episodes (OR 9.237; CI 1.86-45.875; p = 0.007). History of drinking alcohol (OR 55.058; CI 2.975–1018.8; p = 0.007) was shown to affect the incidence of suicide in patients with depression. In the future, careful early detection of psychotic symptoms in patients with major depression is needed so that appropriate psychopharmaceutical treatment is needed to prevent suicide.

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