

Risk Factors for Parasuicide Among Psychiatric Inpatients

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To improve suicide prevention during hospitalization, this study examined risk factors for parasuicide among psychiatric inpatients. A group of 58 psychiatric inpatients (19 with schizophrenia, 20 with depression, and 19 with other diagnoses) who displayed suicidal behavior during hospitalization were compared with two control groups of nonparasuicidal inpatients. For inpatients with schizophrenia, a history of parasuicide was a risk factor; for those with depression, it was suicidal behavior on admission; and for patients with other diagnoses, it was violence during hospitalization. (*Psychiatric Services* 48: 1201-1203, 1997)

The rate of suicide among psychiatric inpatients is reported to be more than 50 times that in the general population (1). Risk factors for suicide among psychiatric inpatients have been identified (2). They include being middle-aged, being male, having a history of suicide attempts, having previous psychiatric hospitalizations, displaying suicidal behavior on admission and during hospitalization, being from a broken home, and experiencing socioeco-

nomic deprivation; suicides are more likely to occur during the first few weeks after hospital admission.

Although it is presumed that hospitalization decreases the risk of suicide, locked doors and specialized care cannot prevent all suicides. Half of all inpatient suicides, especially those during the first few weeks after admission, are difficult to predict and prevent (3). Most previous studies have focused on cases of suicide; however, studies of parasuicide also have clinical significance. The prevalence of parasuicide among psychiatric inpatients has been reported to be ten to 20 times higher than in the general population (4). Gunnell and colleagues (4) reported that 30 to 47 percent of persons who committed suicide had a history of parasuicide, and that 3 to 10 percent of those with such a history committed suicide within ten years after their first parasuicide.

Previous suicidal behavior is one of the best predictors of future suicide attempts, not only in the general population but also among psychiatric inpatients. The purpose of this study was to identify risk factors for suicidal behavior among patients with different diagnoses to improve suicide prevention on psychiatric wards.

Methods

The study was carried out in a 62-bed acute ward of the department of psychiatry at Veterans General Hospital-Taipei in Taiwan. Since 1982 accidents on the ward have been recorded in special charts. Records from January 1982 to September

1991 were reviewed to identify patients who were documented to have intended to kill or injure themselves. The operational definition of parasuicide conformed to that formulated by the World Health Organization working group on preventive practices in suicide and attempted suicide. It was defined as an act with a nonfatal outcome in which an individual deliberately initiates nonhabitual behavior that without intervention by others will cause self-harm and that is aimed at realizing changes that the individual desires through the actual or expected physical consequences. Based on this definition, 58 patients who committed acts of parasuicide during their hospital stay were identified.

The clinical charts of these patients were reviewed to obtain information about age, gender, marital status, level of education, religion, duration of illness, previous hospitalization, suicide history, suicidal behavior at the index admission (that is, hospitalization for an act of parasuicide), history of violence, and violent behaviors during the index hospitalization. The patients were diagnosed using *DSM-III-R* criteria according to the final diagnosis listed in the chart by the physician overseeing the patient's outpatient follow-up care.

For analysis the cases were divided into three diagnostic groups—schizophrenia, depression, and other. The schizophrenia group (N=19) included patients with paranoid and other subtypes of schizophrenia. The depression group (N=20) included those with major depression, dys-

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Table 1

Comparison of parasuicidal inpatients in three diagnostic groups with age-, sex-, and diagnosis-matched nonparasuicidal inpatients

Characteristic	Schizophrenia		Depression		Other diagnoses ¹	
	Parasuicidal (N=19)	Control (N=19)	Parasuicidal (N=20)	Control (N=20)	Parasuicidal (N=19)	Control (N=19)
N not married	15	15	12	10	12	13
Education (mean±SD years)	11.4±3	11.5±2.8	11.5±3.8	11.2±4	10.6±3.9	11.1±3.8
N Buddhist	4	7	6	9	8	4
Duration of illness (mean±SD months)	72.4±65.3	81.9±87.1	24.4±53.5	19.5±38.0	54.7±106.8	54.5±58.9
N with less than three previous admissions	15	17	17	20	17	16
N with a previous suicide attempt ²	12	3	16	11	6	6
N suicidal on index admission ³	5	1	12	2	5	1
N with a history of violence	10	12	5	3	13	8
N violent during index admission ⁴	7	2	3	0	9	2

¹ Other diagnoses included bipolar mania, schizoaffective disorder, delusional disorder, personality disorders, drug abuse, organic mental disorder, and psychosis not otherwise specified.

² $\chi^2=8.92$, $df=1$, $p=.003$, for comparison between schizophrenia groups

³ $\chi^2=10.99$, $df=1$, $p<.001$, for comparison between depression groups

⁴ $\chi^2=6.27$, $df=1$, $p=.012$, for comparison between "other" groups

thymia, adjustment disorder with depressed mood, and bipolar depression. In the third group (N=19) were patients with bipolar mania, schizoaffective disorder, delusional disorder, personality disorders, drug abuse, organic mental disorder, and psychosis not otherwise specified.

For comparison, data from two control groups were also collected. For the first control group, 58 diagnosis-matched patients were selected who were admitted during the same time period, were the same gender and of similar age (not more than five years apart), and were not parasuicidal during the index hospitalization. The second control group was used for comparison of age and gender between parasuicidal and nonparasuicidal patients. Nineteen nonparasuicidal diagnosis-matched patients with schizophrenia and 20 with depression were randomly selected for this group.

Statistical analyses used the t test for continuous variables, and the chi square test or exact probability test for categorical variables.

Results

The 58 inpatients identified as being parasuicidal over the ten-year period included 19 patients in the schizophrenia group (33 percent), 20 in the depression group (34 percent), and 19 in the "other" diagnostic group

(33 percent). The sample consisted of 24 women and 34 men, most of whom were single (67 percent); less than half of the sample (41 percent) had a high school education.

Ages ranged from 17 to 80 years (mean±SD=32.8±14.9 years). Duration of illness ranged from one to 444 months (mean±SD=50.1±79.4 months). The number of previous hospitalizations ranged from 0 to 15 (mean±SD=1.7±2.5). Thirty-four patients (59 percent) had a history of parasuicide, 22 (38 percent) had suicidal behaviors at the index admission, 28 (48 percent) had a history of violence, and 19 (33 percent) were violent during the index hospitalization.

As Table 1 shows, the parasuicidal inpatients in the group with schizophrenia were significantly more likely to have a history of parasuicidal behavior than the nonparasuicidal inpatients with schizophrenia in the first control group. No difference in age or gender was found between parasuicidal patients with schizophrenia and diagnosis-matched nonparasuicidal patients in the second control group.

Parasuicidal inpatients in the depression group were significantly younger than nonparasuicidal patients with depression in the second control group ($t=-2.52$, $df=38$, $p=.016$) and were significantly more

likely to have suicidal behaviors on index admission than diagnosis-matched nonparasuicidal patients in the first control group.

Parasuicidal inpatients in the "other" diagnostic category were significantly more likely to display violence during the index hospitalization than were diagnosis-matched nonparasuicidal inpatients in the first control group. No significant difference was found between the diagnostic groups of parasuicidal and nonparasuicidal patients in marital status, level of education, religion, duration of illness, frequency of previous psychiatric admissions, or history of violence.

Discussion and conclusions

Modestin and Kamm (5) reported that about 35 percent of a sample of psychiatric inpatients who were parasuicidal during hospitalization had motives to commit suicide that were attributable to their psychiatric illness, such as depressive hopelessness or a wish to get rid of an unbearable hallucination. They also found that 25 percent of the inpatient parasuicides were related to conflicts patients had with significant others outside the hospital, and that 20 percent of the parasuicides functioned primarily as an appeal to the treatment team and were connected to interpersonal issues occurring on the unit itself. The hetero-

geneity of parasuicidal inpatients and their motives makes it difficult to formulate universal, easy-to-apply preventive measures.

Our study attempted to identify different risk factors for different diagnostic groups. Among patients with schizophrenia, a previous study identified several risk factors: being young, single, male, and highly educated and having a history of frequent psychiatric admissions and of suicide attempts (6). In the study reported here, the parasuicidal inpatients in the schizophrenia group consisted of young single males; however, no significant difference was found between these parasuicidal patients and nonparasuicidal patients with schizophrenia in age, gender, education, number of previous admissions, or marital status.

The only significant risk factor for parasuicide in the schizophrenia group was a history of parasuicide. Previous suicidal behavior that is attributable to mental illness is likely to be repeated, because many persons with mental illness have limited coping skills and difficulty learning to react to stress in other ways. Clinicians should investigate the reasons for a history of parasuicide among their patients with schizophrenia and manage psychotic symptoms or secondary depression related to mental illness to prevent further suicide attempts.

Klerman (7) reported that a suicide attempt is a cry for help and an indication of an individual's frustration. He also found that young patients with depression are more likely to have feelings of inadequacy in coping with stressful situations. The study reported here found only two significant risk factors for parasuicide among the patients in the depression group—being young and having suicidal behavior on admission. This finding may indicate that parasuicidal inpatients with depression have the same coping strategy both before and after admission. We should pay close attention to young inpatients with depression who display suicidal behavior on admission because they are likely to attempt suicide again after admission.

The relationship between suicide

and aggression has long been recognized. Pfeffer and associates (8) reported that 7 to 48 percent of patients with a history of violence also had a history of suicide attempts. Kermani (9) identified what he called "the violent depressive type," who has a long history of suicide attempts and violence.

In neurobiological studies, low levels of serotonin and its metabolite 5-hydroxyindoleacetic acid are related to both violent and suicidal behaviors (10). On the basis of these findings, it has been suggested that low levels of the inhibitory neurotransmitter serotonin bring about a propensity toward impulsive aggressive behavior, which is turned both inward (suicide) and outward (violence).

In our study, violent behavior during the index hospitalization was the only significant risk factor for parasuicide among patients in the third diagnostic group. This group included patients with heterogeneous diagnoses, and their reasons for parasuicide were also heterogeneous. Some parasuicides in this group seemed to be related to depression, and some were apparently driven by frustration and impulsivity. This finding implies that different types of treatment programs should be developed for patients in different diagnostic groups with these two types of suicidal behaviors—one program focus-

ing on depression and the other on impulsivity. ♦

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