SUICIDE AND MENTAL ILLNESS IN SINGAPORE

By W. F. Tsoi and B. H. Chia

SYNOPSIS

This is a study of 112 cases of suicides who had a past history of being admitted to a mental hospital in Singapore. Only 16% of all the suicides in Singapore over the period 1969 to 1972 had such a history. Compared with the random control there is a preponderance of females and Chinese. Clinically the suicide group was slightly younger and had more disturbed and aggressive histories. 78% were diagnosed as Schizophrenia which is a striking contrast with a similar study in Bristol, England in which 62% were diagnosed as Psychotic Depression. Of the Schizophrenic cases in our study 65% had suffered from the illness for less than 5 years and 52% committed suicide within three months of discharge from the hospital. Compared with all suicides in Singapore there was a definite increase in suicide by drowning and overdosage of drugs by Schizophrenic patients. This study brings out some positive factors related to Suicide in Mental Illness.

INTRODUCTION

The impression obtained from previous studies is that mental illness is an important causative factor in suicide. The many studies which are available show that a great proportion of individuals who have committed suicide have had pre-existing mental illness. This proportion was reported in recent years to vary from 18% in Delhi by Singh, *et al* (1971), to 24% in Western Nigeria by Asuni (1962), to 37% in Singapore by Chia and Tsoi (1972), to 66% in Bristol, England by Seager and Flood (1965) to a peak of 94% in St. Louis, U.S.A. by Robins *et al* (1959). Such wide variation in percentages may stem from differing criteria accepted as evidence of mental illness, but it may, also be due partly to different psychological, cultural, social and environmental factors. The latter reasons for this wide variation could only be established if the criteria used by the authors in forming diagnoses are more standardized and objective. It is unlikely that such an ideal situation can be reached in the near future.

Chia and Tsoi (1972) in their study of "Suicide in Singapore" found that 16·5% of the total cases had received inpatient psychiatric treatment in a psychiatric hospital (Woodbridge Hospital). Admission to a psychiatric hospital in Singapore usually indicates the presence of fairly severe overt psychiatric disorder, usually of a psychotic nature.

W. F. TSOI M.B., B.S. (Sing.), M.R.C.P. (Glas.), D.P.M. (Eng.), Medical Superintendent.
Woodbridge Hospital, Singapore 19.

B. H. CHIA, M.B., B.S. (HK.). D.P.M. (Eng.), Private Psychiatrist.
24 Liat Towers, 541 Orchard Road, Singapore 9.

MATERIAL AND METHODS

All the cases in which a verdict of Suicide during the period 1969 to 1972 (inclusive) were returned by the coroners in Singapore were examined. Those cases which had a history of inpatient-treatment in Woodbridge Hospital (the only mental hospital in Singapore) were selected out and their medical case files were studied by one of us (WFT) and the necessary facts obtained. Attention was paid to the diagnoses, pattern of clinical presentation and outcome, and previous suicide attempts. Similar studies were made from the cases admitted just before and just after the first admission to Woodbridge Hospital of the cases who has committed suicide to serve as the "random control" population.

A total of 132 cases (15·8% of all suicides) has a past history of admission to Woodbridge Hospital, but only 112 cases (85%) could be traced and studied.

RESULTS

Age, Sex and Race

These are shown in tables II and III. The suicide population tends to be younger. There is a slight preponderance of females. These are contrary to what is normally expected from the total suicide population. There are more single males and more married females than the "random control" group. The rate for Chinese is higher and for Malay is lower than the control.

HOUSING ESTATES

The percentage of psychiatric patients staying in Singapore Housing and Development Board housing estates who committed suicide (17%) was found in this study to be lower than the control population who did not commit suicide (23%). This

TABLE I

Year	1969	1970	1971	1972	Total
No. of Suicides in Singapore	188	185	230	236	839
No. of Suicides with past admission to mental hospital	31	31	31	39	132
Percentage	16·5%	16·7%	13·5%	16·5%	15·8%

TABLE II

AGE AND SEX

Sex / Age	Male	Female	Total	Comparison: Percentage of total suicide	Comparison: Percentage of total control
10-19 yr.	10	16	26	23 %	16 %
20-29 yr.	21	18	39	35 %	35 %
30-39 yr. }	14	19	33	29 %	31 %
40-49 yr. }					
50+ yr.	8	6	14	13 %	18 %
TOTAL	53	59	112	100 %	100 %

TABLE III

RACE AND SEX

Sex / Race	Male	Female	Total	Comparison: Percentage of total suicide	Comparison: Percentage of total control
Chinese	48	52	100	89%	77%
Indians	5	5	10	9%	12%
Malays	0	2	2	2%	9%
Others	0	0	0	0%	2%
TOTAL	53	59	112	100	100

again confirms the impression of Chia and Tsoi (1972) that staying in such Housing Board flats does not increase the suicide risk of the population even among the severely mentally ill.

CLINICAL FEATURES

There are more cases with histories of aggressive and restless behaviour in the suicide group than in the control. More of them are also reported to have symptoms of auditory hallucinations and paranoid ideas and delusions. There is also a definitely higher incidence of previous suicide attempts in the suicide group compared to the control group. 26% of suicide cases made suicide threats or entertained suicidal ideas compared to 10% of the control. The total percentage of the suicide group having electro-convulsive therapy (54%) is higher than the total percentage of control group (42%). There is no striking difference in the incidence of physical illness in the two groups.

DIAGNOSIS

This is shown in Table IV. The random control population should give a fairly accurate picture of the diagnostic distribution of the new admissions into Woodbridge Hospital. The majority of the cases are Schizophrenia (61·5%) and only (2·7%) are diagnosed as Affective psychosis. A comparison with the suicide population shows that the percentage of Schizophrenia is even higher (77·6%). It is difficult to comment on the Affective group because of the small number. This pattern is in striking contrast with that obtained by Flood and Seager (1968) who found only 7% Schizophrenia but 62% Psychotic Depression which is equivalent to Affective Psychoses in the suicide group, and 15% of Schizophrenia but 32% Psychotic Depression in his control group. (See Table V). Such marked contrast could be partly due to differences in mental disease pattern between Singapore and Bristol and partly due to attitudes of Psychiatrists towards a diagnosis and treatment to Schizophrenia and Affective Psychosis. Another important factor is the attitude of the community towards inpatient treatment of less disturbing mental patient.

The other interesting findings are the high suicide risk of patients suffering from Puerperal Psychosis and the low suicide risk of patients suffering from Organic Brain diseases. All the 4 cases of Organic brain diseases who committed suicide were female and the diagnoses were: Epileptic psychosis 3 cases, and G.P.I. 1 case. There is only 1 case of a male Alcoholic. Because of the large numbers of Schizophrenia, this is sought out for further analysis.

SCHIZOPHRENIA AND SUICIDE

In this study 87 cases (78%) in the suicide group and 138 cases (62%) in the control group are found to suffer from Schizophrenia. There are more Paranoid Schizophrenia in the suicide group (18%) than in the control group (11%). The sex ratio of the suicide group is 1·1 male to 1 female compared to 1·5 male to 1 female in the control group. The mean age of first admission into Woodbridge Hospital for the suicide group is 30 years and for the control group is 30·5 years. There is no characteristic time when the suicide takes place during the Schizophrenic illness except that the number of cases drops rapidly as the illness becomes chronic. This is shown in greater detail in table VI. Such a trend is understandable because Schizophrenia weakens a person's volition and drive as the disease progresses. More than 50% of the cases committed suicide within the first three months after discharge from hospital. This is similar to the findings of Flood and Seager (1968) in their series consisting largely of psychotic depressions. It appears that the experience of hospitalisation and the realisation by the patients of suffering from a series illness have somewhat contributed to their suicidal deaths during the

TABLE IV

DIAGNOSIS

Diagnoses	Male	Female	Total	Comparison	
				Suicide (%)	Control (%)
Total for Organic Psychoses	0	4	4	3·6	11·2
Schizophrenia	45	42	87	77·6	61·5
Psychotic Depression	3	3	6	5·4	2·7
Puerperal Psychosis	—	5	5	4·5	2·2
Total for Functional Psychoses	48	50	98	87·5	76·4
Neurotic Depression	3	5	8	7·1	9·8
Other Neurosis	0	0	0	0	2·7
Personality Disorder	1	0	1	0·9	4·5
Total for Neurosis	4	5	9	8·0	17·0
Others	1	0	1	0·9	5·4
TOTAL	53	59	112	100	100

TABLE V

COMPARISON WITH RESULTS FOR BRISTOL

Diagnosis	Singapore (%)		Bristol (%)*	
	Suicide	Control	Suicide	Control
Schizophrenia	77·6	61·5	7	15
Affective Psychosis	5·4	2·7	62	32
Others	17·0	35·8	31	53

*Modified from Table I Page 445 Flood and Seager (1968)

TABLE VI

DURATION OF ILLNESS AND SUICIDE (of Schizophrenia)*

Time between First Admission and Suicide	Male	Female	Total	Percentage
Up to 5 years	32	23	55	65·4%
5 to 10 years	8	16	24	28·6%
10 to 15 years	2	1	3	3·6%
15 to 20 years	2	0	2	2·4%
TOTAL	44	40	84	100%

*Information on 3 cases is *not* known.

early stages of their illness when insight and volition are relatively unaffected. Details of the relationship between discharge from hospital and suicide is shown in table VII.

METHODS OF SUICIDE BY SCHIZOPHRENIA

As shown in table VIII, compared to all suicides in Singapore, there is a definite increase in drowning and overdosage of drugs by Schizophrenic patients and less in hanging and poisoning by domestic poisons. Analysis by sex shows that the low number of hanging is confined to the males only, whereas for domestic poisoning this low number is confined to the females only, in which there is not a single case.

The general impression obtained from the study of the cases indicates that the Schizophrenic patients are not as determined as the severely depressed patients in their suicidal act. It appears that suicidal acts for the Schizophrenic patients are impulsive and less sustained. Often because of their confused and disturbed mental state, some of the "suicides" could be contributed by accidental factors. This probably accounts for the high incidence of drowning and jumping (which do not require much planning or effort) among such patients. Such patients also have greater access to psychotropic drugs it is not surprising that drug poison as a method of suicide is three times higher in this group than in the general population.

DISCUSSION AND CONCLUSION

The study of suicides in large numbers can only be carried out posthumously through interviews with relatives. In this study a group of patients is selected in which their mental health has been a subject of examination at varying periods prior to the suicide act. Being a retrospective study, many of the case notes may not contain the information which the psychiatrists consider relevant in understanding suicide behaviour among mental patients. However, it is hoped that results obtained from this study will enable a more comprehensive and revealing study to be conducted in the future.

In this study, the striking finding is the marked difference in the diagnostic distribution of psychiatric illness between Woodbridge Hospital in Singapore and in hospitals in Britain. The reversal of the Schizophrenia and Manic-depressive pattern between these countries can be due to a number of factors. The low percentage of Depressives in Woodbridge Hospital in Singapore can be explained by the Asian attitude towards "Depressive Illness" and their management, and the historical

TABLE VII

SUICIDE AND DISCHARGE FROM HOSPITAL
(of Schizophrenia)*

Duration of Discharge	Male	Female	Total	Percentage
Up to 3 months	26	19	45	52·3%
3 to 6 months	3	9	12	14·1%
6 to 12 months	5	5	10	11·6%
More than 12 months	11	8	19	22·0%
TOTAL	45	41	86	100%

*Information on 1 case is *not* known

TABLE VIII

METHODS OF SUICIDE
COMPARING SCHIZOPHRENIA OF WOODBRIDGE HOSPITAL AND SINGAPORE POPULATION

Methods	Male %		Female %		Total %	
	Schiz.	S'pore population	Schiz.	S'pore population	Schiz.	S'pore population
Jumping	50·0	41·6	48·8	48·0	49·4	44·9
Hanging	20·5	38·6	26·8	22·7	23·5	30·7
Drowning	11·4	3·1	9·8	4·5	10·6	3·8
Overdosage of Drugs	4·5	2·6	9·8	2·0	7·1	2·3
Domestic Poisons	11·4	6·2	0·0	17·5	5·9	11·9
Others	2·3	7·9	4·8	5·3	3·5	6·6
TOTAL	100	100	100	100	100	100

development of Woodbridge Hospital which is looked upon as a hospital for the acutely mentally disturbed patients. In spite of this attitude and other selective factors, this study confirms the finding of Chia and Tsoi (1972) that in Singapore the mental illness that accounts for the highest number of suicides is Schizophrenia.

Pokorny (1964) of U.S.A. and Stengel (1964) of U.K. concluded that Depressive illness was the mental illness with the highest suicide risk. Sainsbury (1955) stated that there was a remarkable consensus that one in every six patients diagnosed as Manic-depressive would die from suicide. However, as early as 1933 Lewis drew attention to the fact that Schizophrenia was the frequently potential suicide and that the old beliefs that the Depressive Psychosis had more or less monopolized that right to commit suicide would require revision. Osmond and Hoffer (1967) commented that the present emphasis upon the Affective psychosis (Depressive Illness) as the main psychiatric illness associated with suicidal risk was misplaced and ought to be changed. Levy and Southcombe (1953) basing their study of 58 suicides who had been patients of a mental hospital found 29 cases (50%) diagnosed as suffering from Schizophrenia.

The other striking finding is the marked different rates of suicide among the different racial groups in Singapore. Murphy (1954) and Chia and Tsoi (1972) noted the extremely low rate of suicide among the Malays and the high rate among the Chinese in Singapore. This study further shows that the suicide rate among the severely mentally ill Malays is also the lowest (see table III). This appears to indicate that different cultural and religious beliefs and values would also influence the rates of suicide in the severely mentally ill.

Methods of suicide vary with different countries. Methods most frequently adopted would depend on the most easily available at the time of crises. The impression is that the patients with marked depressive and paranoid features, are the most determined in their intent to die. They would also often adopt multiple methods in their attempts to achieve success.

The information obtained from this study may give doctors dealing with patients with severe mental illness an insight into the various factors associated with high suicide risk. Suicides are more common in patients suffering from Puerperal Psychosis, Psychotic Depression or Schizophrenia than other psychiatric illness. Positive clinical features would be the presence of paranoid and depressive symptoms and auditory hallucinations. The illness would be of a more severe degree and the patients more disturbed and aggressive. Such patients would be in the earlier stages of their illness, and would have demonstrated some attempts of suicides in the past. For some of these cases, it appears that suicide is the end stage of their psychotic illness for which prevention is difficult at the present stage of our knowledge.

REFERENCES

1. Asuni, T.: Brit. Med. J., 2. 1091, 1962.
2. Chia, B. H. and Tsoi, W. F.: Sing. Med. J., 13, 91, 1972.
3. Flood R. A. and Seager, C. P.: Brit. J. Psychiat., 114, 443, 1968.
4. Levy, S. & Southcombe, R. H.: J. Nerv. Ment. Dis., 117, 504 1953.
5. Lewis, N. D.: Psychoanalyt. Rev., 20, 215, 1933.
6. Murphy, H. B. M.: Med. J. Malaya, 9, 1, 1954.
7. Osmond, H. & Hoffer, A.: J. of Schizophrenia 1, 1, 1967.
8. Pokorny, A. D.: J. Nerv. Ment. Dis., 139, 499, 1964.
9. Robins, E., Murphy, G. E., Wilkinson, R. H., Gassner, S. & Keyes, J.: Amer. J. publ. Hlth., 49, 888, 1959.
10. Sainsbury, P.: "Suicide in London." London, Chapman & Hall., 1955.
11. Seager, C. P., and Flood R. A.: Brit. J. Psychiat., 111, 919, 1965.
12. Singh, K., Jain N. R., Khullar, B. M. P.: J. Indian Med. Association, 1971.
13. Stengel, E.: "Suicide and Attempted Suicide", Harmondsworth, Penguin, 1964.