

Aetiological Factors in Attempted Suicide

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In recent years there have been major advances in our understanding of attempted suicide. In particular, several important studies have thrown light upon the psychopathology and social effects (Stengel, Cook, and Kreeger, 1958), epidemiology (Schneidman and Farberow, 1961; Kessel, 1965; Parkin and Stengel, 1965), and prognosis (Dahlgren, 1945; Schneider, 1954; Rügsegger, 1963) of this behaviour disturbance. Less satisfactory, however, is the present state of knowledge concerning the causes. This is not surprising, since the difficulties of studying the manifold circumstances which may contribute to suicidal behaviour are formidable. But a legitimate criticism is that, hitherto, reported findings have been based almost entirely on uncontrolled observations. Thus the aetiological significance of suggested predisposing factors, which include physical and mental illness, social isolation and disorganization, interpersonal conflicts, and parental deprivation in childhood, remains obscure in the absence of similar data for non-suicidal controls.

It is evident that suicidal behaviour results from the complex interaction of a variety of adverse circumstances in the life of any given individual. Furthermore, these predisposing factors will vary considerably from person to person. Nevertheless, it seems heuristically profitable to postulate that attempted suicides as a group share specific experiences, in childhood as well as in their immediate environment, and are distinguishable in these respects from otherwise comparable groups of non-suicidal individuals.

Based on this premise, the present study aims to identify some of the factors that predispose to attempted suicide by comparing suicidal and non-suicidal patients in respect of certain salient variables. Since, however, the discovery of statistical associations in an isolated survey cannot prove the existence of causal relations, a major consideration in designing such a survey must be its repeatability. Accordingly, we selected for study a number of variables which can be clearly defined and the criteria for assessment of which can be made fully explicit.

It was decided to examine childhood parental loss—(1) incidence, (2) degree of loss, (3) age at loss, (4) paternal/maternal loss ratio, (5) causes of loss, and (6) subsequent childhood environment; and variables in the present environment—(1) material circumstances, (2) social isolation, (3) physical illness, and (4) disruption of interpersonal relationships. A consecutive series of patients admitted to hospital for suicidal attempts are compared with two non-suicidal control groups—(1) psychiatric patients and (2) patients with no psychiatric disorder—in respect of these variables. In this study we have taken advantage of an accident service provided by King's College Hospital. Within a defined area of South-east London all patients using the emergency ambulance service are brought to the casualty department. Any patient who has made a suicidal attempt, however slight the medical danger, is admitted and referred for psychiatric opinion.

This investigation is being repeated by other workers in Connecticut (T. Kearney, personal communication 1966) with the aim of verifying findings and pin-pointing any differences arising from population differentials.

Method

A protocol was designed for recording relevant data about each patient. Information was obtained from structured interviews with patients, and in some cases relatives were also seen.

All patients admitted to King's College Hospital (including Dulwich Hospital) for suicidal attempts between 1 March and 1 September 1965 were included in the study, except for three patients who discharged themselves before they could be interviewed. *Attempted suicide* was defined as any deliberate act of self-injury apparently aimed at self-destruction, however vague the suicidal intent or trivial the medical danger (Stengel, 1964).

Two control groups were drawn from patients attending the same hospitals between March 1965 and March 1966, as follows: (1) Non-suicidal psychiatric patients (N.S. group), consisting of referrals to the department of psychological medicine and excluding those who had made a suicidal attempt at any time in their lives; and (2) Non-psychiatric patients (normal group), comprising medical, surgical, and obstetric patients who had no history, past or present, of psychiatric disorder of any kind; all doubtful cases were excluded.

Patients in each control group were matched with attempted suicides (A.S. group) for age (under 30, 30-49, 50 and over), sex, social class (I and II, III, and IV and V), country of origin (British, other Western, West Indian, Afro-Asian), and, in the case of N.S. patients, diagnosis (neurotic and acute situational reactions, sociopathic personality disturbance, depressive psychosis, schizophrenia, organic brain disorders).

Description of Attempted Suicides

The total sample comprised 156 patients (49 men and 107 women). Their ages ranged from 15 to 81 years; 51% were under 30, 20% were between 30 and 49, and 29% were 50 and over. As might be expected in the predominantly working-class area covered by the hospital, the social-class distribution (General Register Office, 1960) showed a preponderance of semi-skilled and non-skilled workers—Classes IV and V—who comprised 54% of the sample, whereas 35% were in Class III and only 5% in Classes I and II, the remaining 6% (10 patients) being students or unemployed and therefore unclassifiable.

All patients except one had resided in Britain for at least 12 months, but only 79% were born in this country; 13% originating from other Western countries, most commonly Ireland; 4% from the West Indies; 2% from Africa; and 2% from Asia.

In terms of psychiatric diagnosis (American Psychiatric Association, 1952) 65% of the suicidal group were found to have neurotic or personality disorders other than sociopathy, 11% sociopathic personality disturbance, 11% had no formal psychiatric disorder but suffered from an acute situational

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reaction, 7% had psychotic depressive reactions, 4% organic brain disease (five epileptics and one patient with probable cerebral arteriosclerosis), and 2% were schizophrenics. In addition, 18 patients (12%) had a variety of physical illnesses and operations—including chronic bronchitis, diabetes mellitus, renal disease, cervical spondylosis, iridectomy for glaucoma, gastrectomy for peptic ulcer, heart surgery for valvular disease, and hysterectomy for uterine fibroids—within the year preceding their suicidal attempt.

Findings

Statistical comparisons, by means of the χ^2 and Student's *t* tests, have been made between attempted suicides (A.S.) and the control groups—(1) non-suicidal psychiatric patients (N.S.) and (2) patients with no psychiatric disorder (Normals)—in respect of the variables outlined below. Each group comprised 156 patients.

Childhood Parental Loss

Parental loss is defined as loss or continuous absence of one or both natural parents for at least 12 months before the fifteenth birthday.

1. *Incidence.*—Table I shows that almost half of all A.S. patients, compared with only 28% of the N.S. and Normal groups, suffered parental loss in childhood; these differences are statistically significant.

2. *Degree of Parental Loss.*—Complete parental loss (i.e., loss of both parents) was significantly more common in the A.S. group (19%) than among N.S. patients (6%) or Normals (5%) (Table II).

3. *Age at Parental Loss.*—Among those patients who had suffered parental loss, such loss had occurred before the age of 5 (Table III) in a significantly higher proportion of A.S. (55%) than N.S. (34%) or Normal (32%) patients.

TABLE I.—Incidence of Childhood Parental Loss in Attempted Suicides and Controls

	Parental Loss	Intact Home	Totals
A.S. patients	76 (49%)	80 (51%)	156
N.S. controls	43 (28%)	113 (72%)	156
Normal „	44 (28%)	112 (72%)	156

A.S. and N.S.: $\chi^2=13.91$; D.F. 1; $P<0.001$.
A.S. and Normals: $\chi^2=13.01$; D.F. 1; $P<0.001$.

TABLE II.—Degree of Parental Loss in Attempted Suicides and Controls

	Loss of Both Parents	Loss of One Parent	No Loss	Totals
A.S. patients	30 (19%)	46 (29%)	80 (51%)	156
N.S. controls	10 (6%)	33 (21%)	113 (72%)	156
Normal „	8 (5%)	36 (23%)	112 (72%)	156

Loss of both parents—significance of differences between:
A.S. and N.S.: C.R.=3.35±0.001; D.F. 311; $P<0.001$.
A.S. and Normals: C.R.=3.78±0.001; D.F. 311; $P<0.001$.

TABLE III.—Age at Parental Loss in Attempted Suicides and Controls

	Age at Parental Loss (in Years)				Totals	Doubtful
	0-4	5-9	10-14			
A.S. patients	41 (55%)	17 (23%)	17 (23%)	75	1	
N.S. controls	14 (34%)	16 (39%)	11 (27%)	41	2	
Normal „	14 (32%)	19 (43%)	11 (25%)	44	—	

Parental loss before the age of 5—significance of differences between:
A.S. and N.S.: C.R.=2.15±0.06; D.F. 115; $P<0.05$.
A.S. and Normals: C.R.=2.42±0.09; D.F. 118; $P<0.025$.

4. *Paternal/Maternal Loss Ratio.*—Among patients who had lost one parent only, comparisons of paternal/maternal loss ratios revealed no significant differences between the A.S. (2.5:1), N.S. (3.1:1), and Normal (2.8:1) groups. Attempted suicide appears to be unrelated to the sex of the absent parent in the present sample.

5. *Causes of Parental Loss.*—These were grouped under the headings of death, separation/divorce, illegitimacy, and other. The last-mentioned category included circumstances such as war service and chronic hospitalization which led to prolonged but invariably temporary parental absence. Such causes were responsible for parental loss in a significantly higher proportion of controls than A.S. patients, and, correspondingly, death, divorce, and illegitimacy taken together caused parental loss more often in the A.S. group than in controls (Table IV). Separate comparisons within the individual categories of death, divorce, and illegitimacy revealed no significant differences, but death and divorce together were significantly more common causes of parental loss in A.S. patients (87%) than in controls (N.S. 56%, Normals 59%). Our findings suggest that parental loss in non-suicidal controls is not infrequently a result of various temporary exigencies, whereas in attempted suicides such loss is nearly always due to irreversible causes—in particular, parental bereavement and divorce.

TABLE IV.—Causes of Parental Loss in Attempted Suicides and Controls

	Death	Separation/Divorce	Illegitimacy	Other	Totals	Doubtful
A.S. patients	38 (51%)	27 (36%)	4 (5%)	6 (8%)	75	1
N.S. controls	15 (35%)	9 (21%)	4 (9%)	15 (35%)	43	—
Normal „	18 (41%)	8 (18%)	3 (7%)	15 (34%)	44	—

A. Comparing death, divorce, illegitimacy, with other causes:
A.S. and N.S.: $\chi^2=11.73$; D.F. 1; $P<0.001$.
A.S. and Normals: $\chi^2=11.27$; D.F. 1; $P<0.001$.
B. Parental death and divorce—significance of differences between:
A.S. and N.S.: C.R.=3.72±0.08; D.F. 117; $P<0.001$.
A.S. and Normals: C.R.=3.43±0.08; D.F. 118; $P<0.005$.

6. *Subsequent Childhood Environment.*—The environment in which the patient spent the whole or greater part of his childhood after parental loss was categorized as (a) remaining parent; (b) foster-parents, relatives, or friends; (c) orphanage, if a minimum period of 12 months, continuously or intermittently, was spent in such an institution; and (d) other. No significant differences were found between the A.S. and control groups in respect of the subsequent childhood environment, although Normals tended to live with the remaining parent more often (64%) than A.S. (53%) or N.S. (49%) patients (difference between Normals and N.S.: $t=1.40\pm 0.11$, $P>0.05$). Contrary to expectation, the proportions of A.S., N.S., and Normals who resided in orphanages were almost identical (12%, 16%, and 14% respectively).

Immediate Environment

Immediate means within six months of suicidal attempt or referral to hospital.

1. *Material Circumstances.*—These were rated adequate or poor according to the housing conditions and financial state of the patient. The rating poor was applied where there was evidence of overcrowding—a person/room ratio of at least 1.5:1 for the whole dwelling—or gross financial hardship. Poor material circumstances were found in 10% of the A.S. group and in 13% of the N.S. and Normal control groups, these differences being insignificant.

2. *Social Isolation.*—Seventeen per cent. of A.S. patients, 15% of the N.S. group, and 9% of Normals were found to be living entirely alone. The difference between the A.S. and N.S. groups is negligible, but that between A.S. patients and Normals is significant ($P<0.05$). The latter result is probably due to differences in marital status, since the A.S. group, as might be expected, contained a significantly higher proportion of separated and divorced patients (14%) than the Normal group (3%). The A.S. and N.S. groups, however, were similar in terms of marital status as well as social isolation. The present findings, therefore, do not provide any evidence for an association between attempted suicide and social isolation.

3. *Physical Illness.*—Eighteen per cent. of A.S. patients and 37% of N.S. controls had a physical illness or operation within

six months of psychiatric referral. The high proportion among non-suicidal patients most probably reflects the fact that two-thirds of all referrals to the department of psychological medicine came from other departments in the hospital. Hence no conclusions can be drawn from these figures regarding the relation between attempted suicide and preceding physical illness, though our results certainly provide no evidence for such an association.

4. Interpersonal Relations.—Examination of the whole complex range of interpersonal disturbances was not attempted here. We concentrated specifically on one aspect—namely, *recent disruption of close interpersonal relations*. This was defined as a threatened or actual break in any relations regarded as important by the patient, where such disruption had occurred as a result of interpersonal conflict. Loss of a loved person due to bereavement was not included under this heading, which comprised mainly broken love-affairs and marriages. The results are shown in Table V. In the six months preceding admission to hospital no less than 35% of A.S. patients had experienced disruption of close interpersonal relations, compared with 16% of N.S. patients and 8% of Normals, the differences between A.S. and N.S. patients, and between N.S. and Normal groups being statistically significant. These results suggest an association between attempted suicide and the recent disruption of close relationships. We may note *pari passu* that a small proportion of patients in each group had no close relationships of any kind. Predictably, this situation was found more often among psychiatric patients—both A.S. and N.S.—than among the Normals, but since attempted suicides and N.S. controls were similar in this respect our results do not indicate a connexion between suicidal behaviour and the absence of close interpersonal relationships.

Disrupted Relations and Parental Loss.—We have noted a statistical association between each of these variables and suicidal behaviour. Further analysis revealed a correlation between recent disruption of close interpersonal relations and parental loss. This correlation was found in both suicidal and non-suicidal psychiatric patients, whereas interpersonal disruption among normal controls was unrelated to parental loss (Table VI). These results are discussed below.

TABLE V.—*Disruption of Interpersonal Relations in Attempted Suicides and Controls*

	Interpersonal Relation within 6 Months of Admission				
	No Change	Disruption	No Close Relationships	Totals	Doubtful
A.S. patients ..	85 (58%)	51 (35%)	10 (7%)	146	10
N.S. controls ..	111 (75%)	23 (16%)	14 (9%)	148	8
Normal „ ..	135 (90%)	12 (8%)	3 (2%)	150	6

- a.** Disruption of relations—significance of differences between:
 A.S. and N.S.: C.R. = 3.83 ± 0.05; D.F. 293; P < 0.001.
 A.S. and Normals: C.R. = 5.65 ± 0.06; D.F. 295; P < 0.001.
 N.S. and Normals: C.R. = 2.01 ± 0.04; D.F. 297; P < 0.05.
- b.** No close relations—significance of differences between:
 A.S. and Normals: C.R. = 2.01 ± 0.02; D.F. 295; P < 0.05.
 N.S. and Normals: C.R. = 2.79 ± 0.03; D.F. 297; P < 0.01.

TABLE VI.—*Disruption of Interpersonal Relations and Parental Loss*

	Incidence of Recent Disruption of Interpersonal Relations		
	In Patients with Parental Loss	In Patients from Intact Homes	Significance of Differences
A.S. patients ..	31/70 (44%)	20/76 (26%)	C.R. = 2.30 ± 0.08; D.F. 145; P < 0.05
N.S. controls ..	10/39 (26%)	13/109 (12%)	C.R. = 2.04 ± 0.07; D.F. 147; P < 0.05
Normal „ ..	3/42 (7%)	9/108 (8%)	Not significant

Discussion

Any conclusions drawn from the present findings must be regarded as provisional, and comparable studies of other hospital populations are required. Statistical correlations between attempted suicide and childhood parental loss have been

reported in three previous control studies. Walton (1958) found a significantly higher incidence of parental loss in patients with depressive illness who had made a suicidal attempt than in non-suicidal depressives. Bruhn (1962), who compared attempted suicides admitted to hospital with non-suicidal psychiatric outpatients in terms of incidence and degree of parental loss, reported that the suicidal group suffered parental loss with greater frequency and that such loss more commonly involved both parents. Lastly, one of us (S.G.) studied parental loss incidence, degree of loss, age at loss, maternal/paternal loss ratio, causes of loss, and subsequent childhood environment in suicidal and non-suicidal patients with neurotic and sociopathic disorders. The results obtained were closely similar to present findings (Greer, 1964, 1966).

Varying definitions of parental loss were used in these studies, so that detailed comparisons of reported figures are of limited value. Nevertheless, it is noteworthy that associations between suicidal behaviour and parental loss have been observed in each study, whereas no contrary findings have been reported to date.

Analysis of present data indicates that, as compared with non-suicidal psychiatric patients and psychiatrically normal hospital patients, attempted suicides not only experience parental loss more frequently, but such loss more often involves both parents, occurs at a younger age, and is more likely to be due to irreversible causes such as parental death or divorce. The present study thus corroborates previous findings so far as they go and provides further evidence in favour of a relation between attempted suicide and parental loss.

Examination of variables in the immediate environment revealed no associations between attempted suicide and material circumstances, physical illness, or social isolation. The findings concerning social isolation are of particular interest in view of Sainsbury's (1955) study, which showed a correlation between this variable and completed suicide. Differences between attempted and completed suicides have been demonstrated in terms of age and sex distribution, underlying motives (Stengel, 1956; Stengel *et al.*, 1958; Carstairs and Brown, 1958; Carstairs, 1961; Schneidman and Farberow, 1961) and childhood environment (Dorpat, Jackson, and Ripley, 1965). Our results suggest that social isolation, which predisposes to suicide but is seemingly unrelated to attempted suicide, may be another differentiating feature.

Neither social isolation (i.e., living alone) nor psychological isolation (i.e., the absence of any close interpersonal relationships) was correlated with attempted suicide, though predictably both situations were more common among psychiatric patients, suicidal and non-suicidal, than in normal controls. On the other hand, attempted suicide was associated with a specific interpersonal disturbance—namely, threatened or actual disruption of a close relationship due to interpersonal conflict. These results lend support to the observation of Harrington and Cross (1959) that “disturbed social relations assume much more importance than social isolation” in attempted suicide.

We have seen that disruption of close relationships occurs more commonly among psychiatric patients than in normal controls, thus confirming clinical impressions that psychiatric disorder contributes to such interpersonal disturbances. However, disruption of relationships was also correlated with parental loss in psychiatric patients (both suicidal and non-suicidal) but not among normals. This suggests that parental loss may be another contributory factor to interpersonal conflict and the consequent breakdown of relationships in psychiatric patients. Finally, we observed that both parental loss and recent disruption of close relations occur more frequently among attempted suicides than in non-suicidal psychiatric patients. These findings may be explained by postulating that parental loss contributes to attempted suicide in two complementary ways: (1) as already indicated, parental loss may

predispose to disruption of interpersonal relationships, and (2) this childhood experience may make individuals abnormally vulnerable to the loss of a loved person in later life, thus precipitating suicidal reactions.

These tentative propositions, and the findings upon which they are based, obviously require verification. If confirmed, they raise a number of fundamental questions concerning the psychological mechanisms whereby parental loss contributes to the disruption of interpersonal relations and sensitizes certain individuals to this situation. Clearly, further research in this area is indicated.

Summary

A consecutive series of 156 attempted suicides admitted to hospital were compared with (1) non-suicidal psychiatric patients and (2) medical, surgical, and obstetric patients without psychiatric disorder in respect of salient variables in their past and present environment. Controls were matched with attempted suicides for age, sex, social class, country of origin, and, in the case of psychiatric patients, diagnosis.

Attempted suicides differed significantly from both control groups in having a greater incidence of childhood parental loss, and such loss more commonly involved both parents, occurred at a younger age, and was more likely to be permanent (i.e., due to parental death and divorce). The sex of the absent parent and the childhood environment after parental loss were not correlated with attempted suicide.

With regard to the immediate environment, a significantly higher proportion of attempted suicides than controls had experienced recent disruption of a close relationship due to interpersonal conflict. No significant differences were observed between the suicidal and control groups in terms of (a) social isolation (i.e., living alone), (b) psychological isolation (i.e., the

absence of any close interpersonal relationships), (c) material circumstances, or (d) physical illness.

Recent disruption of close relationships was found to be correlated with parental loss. Possible ways in which these variables may contribute to suicidal behaviour are considered. The need for verification of present findings is stressed. The same study is being conducted on an American hospital population by other workers, and their findings are awaited with interest.

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Attempted Suicides from Intact and Broken Parental Homes

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In a previous paper a comparative study of patients admitted to hospital because of suicidal attempts and matched non-suicidal controls is described (Greer, Gunn, and Koller, 1966). Statistical correlations were demonstrated between suicidal behaviour and parental loss in childhood, which was defined as loss or continuous absence for at least 12 months of one or both natural parents before the age of 15. Compared with non-suicidal controls, the suicidal patients had a significantly higher incidence of parental loss, and such loss more commonly involved both parents, occurred at a younger age, and was more frequently due to irreversible causes (i.e., parental death and divorce). The findings provide evidence for a relation between attempted suicide and parental loss. It should be noted, however, that this childhood experience occurred in only 49% of suicidal patients. It is therefore pertinent to seek information about predisposing factors in those patients who have not suffered parental loss, and to determine, if possible, whether the circumstances associated with suicidal behaviour differ among patients from broken and intact homes.

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With these aims in view, the present paper reports detailed comparisons between suicidal patients who had experienced parental loss and those from intact homes in respect of a number of salient variables. All patients admitted to King's College Hospital for attempted suicide between 1 March and 1 September 1965 (with the exception of three patients who discharged themselves immediately after admission) were included in our study, the relevant information being obtained from interviews with patients and, in some cases, their relatives. A detailed description of the sample has been given (Greer *et al.*, 1966).

Findings

The total sample comprised 156 suicidal patients, of whom 76 (49%) had experienced childhood parental loss (P.L. group) and 80 (51%) came from intact homes (I.H. group). Statistical comparisons, by means of χ^2 and Student's *t* tests, between the P.L. and I.H. groups are outlined below.

Age Distribution (Table I).—Though differences between the age distributions as a whole did not reach statistical significance, separate comparisons within each age group revealed that a