Hospital Topics

Changes in the Pattern of Admissions for Attempted Suicide in Newcastle upon Tyne during the 1960s

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Summary

Comparison of 726 admissions to Newcastle upon Tyne General Hospital for attempted suicide in the period 1 October 1966 to 30 September 1969 with a previously reported series of 276 in 1962-4 showed an overall increase in annual admissions of 77%. For both sexes under age 30 years and females over 60 years the increase was over double. Psychiatric morbidity had increased, and there was also a significant rise in the proportion of unemployed men.

The relative frequency of ingestion of non-barbiturate psychotropic or hypnotic drugs and barbiturates had changed, the former now being more common than the latter as the suicidal agent. Finally, there had been a significant increase in the proportion of patients receiving subsequent psychiatric treatment.

Introduction

Though the term "attempted suicide" has been criticized^{1,2} it is still the most frequently used to refer to acts of self-injury or self-poisoning in which an element of self-destructive intent, no matter how vague, can be inferred. Whatever the disagreement about terminology there is no doubt that the behaviour itself has assumed epidemic proportions. Annual admissions for attempted suicide in England and Wales currently exceed 50,000,³ and the rate has been increasing by 10% per annum.⁴ These patients account for up to 19% of emergency medical admissions⁵ and over 8% of all general medical admissions.⁶

Attempted suicide is therefore a major problem medically, socially, and, not least, economically, for the cost of resuscitating these patients must be immense. Efforts to control this contemporary epidemic require the identification of the population responsible for the increase, and one method of obtaining this information is by comparing the characteristics of cases of attempted suicide admitted at one hospital at different times.

The present paper compares the features of cases admitted to Newcastle upon Tyne General Hospital during the three-year period 1 October 1966 to 30 September 1969 with a previously published series for 1962-4 at the same hospital.⁶

Patients and Methods

Newcastle upon Tyne and its immediate environs are served by two acute general hospitals—the Royal Victoria Infirmary, a board of governors teaching hospital of 600 beds, and the Newcastle General Hospital, a regional board hospital of 1,100 beds. (Both these hospitals together with the local psychiatric hospital are amalgamating to form a university hospital teaching group in October 1971.)

It is the policy at both hospitals for every patient admitted after a suicidal attempt to be interviewed by a psychiatrist before discharge, and enough staff are available to ensure that few are missed. Though the total number of admissions is available for the period 1960-9 (see Chart) the detailed analysis is concerned with only 726 admissions to Newcastle

Annual admissions to Newcastle upon Tyne hospitals for attempted suicide during 1960-9. Solid line indicates total admissions to Newcastle upon Tyne hospitals. Broken line indicates admissions to Newcastle upon Tyne General Hospital only.

General Hospital during the period 1 October 1966 to 30 September 1969; the patients were interviewed by members of the psychiatric department in the medical wards before discharge or transfer to psychiatric care. These are compared with 276 admissions to the same hospital during the period 1 April 1962 to 31 March 1964 previously reported by Whitlock and Schapira.⁶

Results

The annual admissions to Newcastle upon Tyne hospitals for attempted suicide throughout the 1960s are shown in the

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Chart for both hospitals combined and for Newcastle General Hospital separately. There was no diversion of cases from the Royal Victoria Infirmary to the General Hospital, as the increase in admissions was even greater at the former hospital.

The total admission curve shows, apart from a dip in 1965 and a plateau in 1968, a linear increase from 180 in 1960 to 716 in 1969, representing an increase of 298%. The General Hospital admissions follow a similar pattern, from 89 in 1960 to 286 in 1969, an increase of 221%. For comparison the hospital admissions for all forms of poisoning in England and Wales increased by 190% during the period 1960-7.³

Age and Sex.—The age and sex distribution of the 1966-9 series of patients is shown in Table I. The sex ratio of 2.5 females to 1 male is not significantly greater than the 1962-4 ratio of 1.9 to 1.

TABLE I—Sex and Age Distribution of Patients admitted for Attempted Suicide to Newcastle upon Tyne General Hospital 1966-9

Age (years)	Males			Females			Total Cases	
	No.	%	Mean % Change since 1962-4	No.	%	Mean % Change since 1962-4	No.	%
10-19	36	17.2	+118	108	20.8	+100	144	19.8
20-29	68	32.6	+108	144	27.9	+118	212	29.2
30-39	54	25.8	+38	110	21.3	+75	164	22.6
40-49	24	11.5	No Change	80	15.5	+78	104	14.3
50-59	12	5.7		38	7.4	+58	50	6.9
≥60	15	7.2		37	7.1	+105	52	7.2
Total	209	100.0	+48	517	100.0	+91	726	100.0

For comparison with the 1962-4 series, which was over a two-year period, both sets of figures have been converted to mean annual rates to calculate the percentage change since 1962-4. The total of 726 admissions over three years represents a 77% increase in the annual rate, but this is composed of a 91% increase for females and a 48% increase for males. Whereas the increase in females is distributed throughout all age groups the increase in males affects mainly those under 30. Males over 40, in fact, show no change in the annual rate. The proportion of males under 40 (75%) significantly exceeds the 1962-4 proportion of 64% ($\chi^2=5.2$, D.F.=1, $P<0.025$) but the increase in the proportion of females aged under 40—from 67% to 70%—is not statistically significant.

Marital Status.—The 1962-4 series contained an excess of single and separated or divorced patients compared with the general population.⁶ The 1966-9 series was unchanged in this respect (Table II).

TABLE II—Marital Status of Patients

	Males				Females			
	1962-4		1966-9		1962-4		1966-9	
	No.	%	No.	%	No.	%	No.	%
Single	35	37	82	39	59	33	144	28
Married	48	51	100	48	94	52	302	58
Separated/divorced ..	5	5	5	2	14	8	31	6
Widowed	6	6	22	11	13	7	40	8
Total	94	100	209	100	180	100	517	100

Social Class.—In 32% of males and 23% of females there was insufficient information for accurate social class classification. In the 1962-4 series only males were classified, social classes I and II being unrepresented and III, IV, and V containing 12%, 41%, and 47% respectively. This constituted a pronounced excess of classes IV and V and under-representation of class III compared with the general population.⁶ In the 1966-9 series 7% of males were in classes I and II, 20% in class III, 15% in IV, and 26% in V. When the un-

classified cases are grouped with classes IV and V there is still a significant shift towards classes I-III ($\chi^2=9.49$, D.F.=1, $P<0.005$) though the excess in classes IV and V compared with the general population persists. No figures are available for comparison in females, but in the 1966-9 series 10% were in classes I and II, 37% in class III, 14% in IV, and 16% in V.

Religious Affiliations.—Comparison of the 1962-4 and 1966-9 series shows no significant change in religious affiliation. In the former study the distribution was Church of England and Church of Scotland 68%, Roman Catholic 27%, Non-Conformist 3%, and other 2%. The corresponding figures for the 1966-9 series were 64%, 20%, 7%, and 8%. The relative excess of Roman Catholics and deficiency of Non-Conformists compared with the general population noted by Whitlock and Schapira⁶ therefore persists.

Previous Psychiatric Morbidity.—The frequency of previous hospital psychiatric treatment whether as inpatient or out-patient and previous suicidal attempts in the two series are compared in Table III. In both sexes there was a significant

TABLE III—Previous Psychiatric Morbidity

	Males				Females			
	1962-4		1966-9		1962-4		1966-9	
	No.	%	No.	%	No.	%	No.	%
Previous psychiatric treatment ..	34	36	109	52*	64	36	254	49†
Previous suicide attempt ..	41	44	80	38	54	30	182	35

* $\chi^2=6.64$, D.F.=1, $P<0.01$.

† $\chi^2=9.91$, D.F.=1, $P<0.005$.

rise in the proportion with a history of previous psychiatric treatment but not in the frequency of a previous suicidal attempt. In the 1966-9 series 30% of all patients making their first suicidal attempt and 84% of those with a history of a previous attempt had received psychiatric treatment of some kind.

Precipitant of Incident.—In the 1966-9 series a distinction was made between a precipitant—an event or situation immediately preceding and apparently triggering the action—and other indices of interpersonal or social disorganization that were regarded as predisposing factors. This precludes direct comparison with the 1962-4 series in which only the "main precipitant cause" was recorded.⁶ The nature and frequency of precipitants are summarized in Table IV. A specific precipitant was found in 56% of males and 60% of

TABLE IV—Precipitant of Suicidal Act

	Males		Females	
	No.	%	No.	%
Marital discord	43	21	129	25
Dispute with parent or close relative	27	13	62	12
Dispute with boy or girl friend ..	13	6	41	8
Occupational difficulty	9	4	7	1
Physical illness	7	3	12	2
Financial worries	6	3	13	3
Other	12	6	45	9
Total admitting a precipitant	117	56	309	60

females, and marital discord predominated. The presence of a precipitant correlated negatively with increasing age ($r=-0.197$, $P<0.01$) and a diagnosis of a psychotic illness ($r=-0.186$, $P<0.01$).

Predisposing Factors.—Unemployment is the only variable directly comparable with the 1962-4 series. For males the frequency of unemployment increased from 34% in 1962-4

to 47% in 1966-9 ($\chi^2=4.36$, D.F.=1, $P<0.05$). Of these 24% had been unemployed less than four weeks, 33% from four weeks to six months, and 43% more than six months. Unemployment in females decreased from 14% to 12% and of these 30% had been unemployed for less than one month, 26% from one month to six months, and 44% over six months. In the 1966-9 series *financial difficulties* were a feature in 30% of males and 24% of females, *housing problems* were present in 16% of males and 13% of females, and *social isolation* was experienced by 21% of males and 19% of females. *Chronic physical illness* was present in 27% of males and 24% of females. *A disturbed relationship with an important figure*, usually the spouse, was found in 50% of males and 51% of females, and the *death of an important figure* occurred within the preceding 12 months in 9% of males and 14% of females.

Methods.—The methods of self-poisoning or injury used are shown in Table V. Where combinations of methods were used all are listed. Psychotropic drugs were used by 68% of males and 70% of females. Barbiturates were used either alone or in combination with other methods by 28% of males and 31% of females, so that 40% of males and 39% of females took psychotropic drugs other than barbiturates. Compared

TABLE V—Method of Suicide Attempt

	Males		Females	
	No.	%	No.	%
Psychotropic drugs	141	68	360	70
Barbiturates	58	28	162	31
Non-barbiturate hypnotic ..	34	16	107	21
Anxiolytic agent	27	13	60	12
Antidepressants	21	10	50	10
Phenothiazine derivatives ..	11	5	12	2
Amphetamine and derivatives	2	1	5	1
Salicylates	26	12	82	16
Other drugs and poisons ..	32	15	80	15
Carbon monoxide poisoning ..	13	6	11	2
Self-injury	11	5	6	1

with the 1962-4 series, in which 47% of males and 58% of females used barbiturates, the decline in the use of barbiturates is statistically highly significant for both sexes (males: $\chi^2=10.54$, D.F.=1, $P<0.001$; females: $\chi^2=39.56$, D.F.=1, $P<0.001$). Barbiturates, however, remain the commonest single type of drug used, and some form of "sleeping tablets" were taken by 44% of males and 52% of females. The sources of the psychotropic drugs taken in 501 cases were as follows: general-practitioner prescription 391 (78%) (26% of these on the recommendation of a psychiatrist), hospital prescription 28 (6%), relative's supply 60 (12%), friend's supply 12 (2%), illicit supply 3 (0.6%), source unknown 7 (1.4%). "Other drugs and poisons" include drugs used for non-psychiatric medical reasons and toxic household substances such as disinfectants.

Psychiatric Diagnosis.—The primary psychiatric diagnoses in the two series are shown in Table VI. "Neurosis" includes

TABLE VI—Primary Psychiatric Diagnosis

	Males				Females			
	1962-4		1966-9		1962-4		1966-9	
	No.	%	No.	%	No.	%	No.	%
Acute situational reaction	11	12	20	10	33	18	58	11
Neurosis	59	63	102	49*	64	36	321	62
Personality disorder	14	15	61	29*	39	22	78	15†
Psychosis	7	7	19	9	20	11	47	9
Organic brain disease	3	3	4	2†	16	9	5	1*
Mental subnormality	3	3	3	1	8	4	8	2
Total	94	100	209	100	180	100	517	100

* $P<0.001$.† $P<0.050$.‡ $P<0.025$.

anxiety states, neurotic depression, and depression of indeterminate nature (six cases only), and "psychosis" endogenous depression, manic depressive psychosis, and all forms of schizophrenia. There was a significant decrease in the proportion of males diagnosed as "personality disorder" or "organic brain disorder" and a corresponding increase in the diagnosis of neurosis. In the 1966-9 series 23% of males showed sociopathic features, compared with 38% in the 1962-4 series ($\chi^2=8.14$, D.F.=1, $P<0.005$). Similarly only 6% of females in the 1966-9 series were regarded as sociopathic, compared with 13% in the 1962-4 series ($\chi^2=9.22$, D.F.=1, $P<0.005$). Altogether 53% of males and 63% of females in the 1966-9 series were regarded as having some form of depressive illness, compared with 23% of males and 44% of females in the 1962-4 series (males: $\chi^2=22.52$, D.F.=1, $P<0.001$; females: $\chi^2=19.30$, D.F.=1, $P<0.001$).

Influence of Alcohol.—There was a history of habitual excessive alcohol consumption in 17% of males and 2% of females in the 1966-9 series, but this information was not recorded in the 1962-4 series. Whereas 60% of males in the 1962-4 series consumed alcohol immediately before the suicidal attempt only 44% of the 1966-9 series did so ($\chi^2=6.67$, D.F.=1, $P<0.01$); 17% of females in each series behaved in this manner. Alcohol consumption immediately beforehand correlated significantly with a diagnosis of sociopathic personality ($r=0.297$, $P<0.001$) and a history of habitual excessive alcohol consumption ($r=0.253$, $P<0.001$).

Fate of Patients.—The fate of the patients in the two series after the initial psychiatric assessment is compared in Table VII. The proportion receiving subsequent psychiatric management increased from 60% of both sexes in 1962-4 to 75%

TABLE VII—Fate of Patients

	Males				Females			
	1962-4		1966-9		1962-4		1966-9	
	No.	%	No.	%	No.	%	No.	%
Psychiatric inpatient treatment ..	34	36	58	28	67	37	115	22
Psychiatric outpatient treatment ..	23	24	89	47*	42	23	289	56
Discharged home without follow-up ..	32	34	39	19†	57	32	83	16*
Referred to social agencies only ..	4	4	11	5	13	7	27	5
Died	1	1	3	1	1	1	3	1
Total	94	100	209	100	180	100	517	100

* $P<0.001$.† $P<0.005$.

of males and 78% of females in 1966-9, mainly as outpatients. Significantly fewer were discharged home without follow-up arrangements in the 1966-9 series than in the 1962-4 series.

Discussion

The increase in annual admissions to the two general hospitals in Newcastle upon Tyne for attempted suicide amounted to almost 300% between 1960 and 1969. This corresponds closely to the experience of other provincial centres in Britain.^{4 7-10} The increase at Newcastle upon Tyne General Hospital, with which we are concerned, was 221% for 1960-9. Such increments could not be due merely to more frequent referral of previously concealed cases^{9 11} and must reflect a real increase in incidence.

The sex and age distribution of the excess of 1966-9 cases over the 1962-4 (Table I) shows that whereas the increase in males is confined to the under-40s in females it is more evenly distributed throughout all age groups. Aitken *et al.*⁴ found a maximal increase in men aged 20-25 in Edinburgh (1962-7). The social class distribution of cases of attempted

suicide admitted to general hospitals tends to differ from the general population by an under-representation of social classes I and II and to a less extent class III.^{7, 12} In Newcastle upon Tyne there was a significant increase in males in social classes I-III between 1962-4 and 1966-9, but it is impossible to decide whether this represents a change in incidence or a change in referral practice.

In the 1966-9 series a distinction was made between pre-disposing and precipitating factors. A precipitant was not detected in 40% of patients, mainly the older age groups and those with a psychosis. The considerable interpersonal difficulties experienced by people attempting suicide is indicated by 50% of males and 51% of females admitting to a disturbed relationship with an important figure, usually the spouse. Disputes with spouse or sexual partner also constituted the most frequent precipitating factor. This preponderance of impaired interpersonal relationships is a feature in many other series of attempted suicide cases,^{6, 13-16} and Bruhn¹⁷ found a significantly greater incidence of marital disharmony in patients attempting suicide compared with a control group of non-suicidal psychiatric outpatients.

Unemployment in north-east England was about twice the national average—that is, 4.5%—during both the 1966-9 and 1962-4 periods. The 1966-9 series showed a significant increase in the proportion of unemployed males but no change in females compared with 1962-4. Unemployment was rarely cited as a precipitant of the suicidal attempt and two-thirds were unemployed for more than four weeks beforehand. Nevertheless, the loss of self-esteem and the financial hardship associated with unemployment may have provided a background of insecurity which facilitated subsequent suicidal behaviour. Such factors would be more likely to be operative in young males attempting to provide for a family.

The decline in the use of barbiturates and the increase in the use of non-barbiturate hypnotic and psychotropic drugs parallels the change in the number of prescriptions for these substances since 1964¹⁸ and corresponds to the findings of Aitken *et al.* in Edinburgh.⁴ The psychiatric morbidity of those attempting suicide in Newcastle upon Tyne, as evidenced by a history of previous psychiatric treatment or a concurrent diagnosis of a specific depressive illness, increased, and this would also tend to increase the number with access to psychotropic drugs.

The composition of the population responsible for the increase in admissions to one hospital between 1962-4 and 1966-9 has been established but it is less clear why these individuals behaved in this fashion and correspondingly difficult to suggest effective prophylactic measures. This mode of behaviour is now so prevalent that it constitutes almost a cultural pattern of reaction to stress or frustration. In this as in other series^{13, 18} some two-thirds of patients acted on impulse and therefore were not likely to consult any of the emergency counselling services, such as the Samaritans, during the suicidal phase. Control of the availability of drugs therefore assumes considerable importance. In this series as in others⁹ the major proportion of drugs used had been prescribed by a general practitioner. This question is analysed in detail, with particular reference to the role of the general practitioner in prophylaxis, in a separate paper.²⁰ Briefly it was found that of the 391 patients who took an overdose of psychotropic

drugs obtained from their general practitioner 77% did so within one month and 36% within one week of their last consultation with this doctor, 31% within one month of the drug first being prescribed. The presenting symptoms were often neurotic or somatic in nature or of insomnia rather than depression, though a subsequent diagnosis of depressive illness was made in 65% of cases.

The more somatic the mode of presentation the more reticent was the patient in discussing his underlying problems and the less likely was the doctor to have inquired about depression or recent suicidal ideas. The type of drug prescribed and used in the overdose was also determined more by the presenting symptoms than by the psychiatric diagnosis.

We suggest, therefore, that patients should be given greater opportunities for disclosing their underlying problems to their doctors, depression and suicidal thoughts should be discreetly queried in those presenting symptoms suggestive of psychological distress, the need for psychotropic drugs should be more critically assessed, and the patient's psychiatric state and suicide potential should be reviewed and the efficacy of the drugs reassessed before issuing repeat prescriptions.

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