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One Hundred Cases of Suicide in Elderly People

HOWARD CATTELL and DAVID J. JOLLEY

Background. The White Paper *The Health of the Nation* targets a reduction in suicide rates. Preventive strategies must be guided by an understanding of the demography and antecedents of suicide. These issues are examined in relation to suicide by old people in Manchester.
Method. One hundred consecutive coroners' inquisitions on people aged over 65 occurring between 1980 and 1991 in which the verdict was suicide were scrutinised and related to Health Service notes.
Results. Suicides were rare, numbers ranging from 0 to seven per annum per Health District. Rates did not vary between district but did within smaller sub-populations. Most individuals died at home; 65% were physically ill, of whom 23% had been hospitalised within the previous year. At least 60% were clinically depressed, with 25% being prescribed antidepressants. A total of 43% had seen their general practitioner in the previous month but only 14% were in contact with psychiatric services.
Conclusions. Many elderly people who commit suicide are not in close contact with primary care services; those who are may not be prescribed appropriate treatment, and few are referred for specialist care. Specialist services will fail to reduce suicide rates unless they embark upon programmes to increase public awareness of therapeutic possibilities and work more closely with primary care agencies to realise these possibilities.

The prevention of suicide is receiving public attention at present. The White Paper, *The Health of the Nation* (1992), which includes mental illness as one key area of health gain, specifically targets a reduction in the suicide rate:

> To reduce the overall suicide rate by at least 15% by the year 2000 (from 11.1 per 100 000 population in 1990 to no more than 9.4).
> To reduce the suicide rate of severely mentally ill people by at least 33% by the year 2000 (from the estimate of 15% in 1990 to no more than 10%).

As a consequence, District Health Authorities, Family Health Service Authorities and provider units are obliged to give active consideration to possible preventive strategies as part of their health gain planning initiatives.

If it is accepted that health care professionals have an important role to play in suicide prevention, it is necessary to identify those groups at risk, determine the antecedent causes and consider practical means of intervention. The practical aspects of prevention must begin with an understanding of what actually occurs in a particular community and the current influence of primary and secondary health care services.

Although there has also been a discernible increasing trend in the number of suicides among the elderly in the developing world (Pritchard, 1992), research and public attention have mainly centred on the marked rise in suicides among adolescents and young adults. It must be remembered, however, that in England and Wales, along with most other countries, the suicide rate is at its highest in the elderly population, with elderly men demonstrating the highest rates of all age groups (Diekstra, 1989). Suicide in the elderly thus deserves special attention. Official Mortality Statistics for 1992 show a total of 3675 suicides in England and Wales, of which 688 (19%) were of people over the age of 65 years. In England and Wales the death rate in the elderly population from suicide, self-inflicted injury and undetermined injury in the period 1987–1991 was 15.7/100 000 (males 22/100 000, females 11/100 000 respectively). How these statistics relate to an average health district's old age psychiatry service is less well known; in particular, the quantitative relationship between suicide of the elderly, mental illness and previous contact with health care agencies via primary and secondary services has not previously been described.

Although suicides among the elderly have received relatively little research attention, earlier pioneering studies in the general population laid the basis of our understanding of the social, physical and psychiatric antecedents (Robins *et al*, 1959; Dorpat & Pipley, 1960; Barraclough *et al*, 1974), which has been supplemented by more recent studies (Rich *et al* 1986; Asgard, 1990). While we await large-scale comprehensive studies of suicide in the elderly which utilise structured interviews with informants, an alternative source of data, namely that obtained from

the use of coroners' inquests, has provided useful information from studies in both the general adult and elderly populations (Sainsbury, 1955; Ovenstone & Kreitman, 1974; Cattell, 1988). Studies within the single catchment area of a psychiatric service over an extended time span have only recently been described (King & Barraclough, 1990) and have not concentrated specifically on the elderly. This study, using data obtained from the scrutiny of coroners' inquests and psychiatric notes, examines the social, physical and psychological antecedents associated with suicides of the elderly and subsequently examines issues related to primary care services and the impact of secondary old-age psychiatry services in a defined urban district population. Our principal aim was to facilitate an informed appraisal of possible preventive strategies which may be applicable to health care professionals working with the elderly.

Table 1
Annual number of suicides in Manchester, by district

Year	South (pop. >65 = 28 700)	Central (pop. >65 = 17 200)	North (pop. >65 = 23 300)	Outer
1980	4	1	4	1
1981	1	4	4	1
1982	4	4	5	2
1983	2	0	5	1
1984	2	0	1	0
1985	4	1	4	1
1986	7	2	3	2
1987	2	0	0	0
1988	4	3	4	2
1989	4	0	3	1
1990	3	1	1	2
Total	37	16	34	13
Rate per 1000 elderly over 10 years	1.3	0.93	1.46	

Method

With the assistance of the Central Manchester Coroner, we studied 100 consecutive inquests where a verdict of suicide had been returned. The data collected comprised all cases of suicide in persons over the age of 65 years occurring in the City of Manchester between June 1980 and April 1991. Only cases in which the official verdict was suicide were included, thereby omitting those with undetermined injury (open verdicts) which are included in *The Health of The Nation* targets. Similarly, accidental deaths of the elderly, some of which are likely to be 'concealed' suicides, were not included.

The City of Manchester is divided into three sectors for health care, namely the South, Central and Northern districts, in which the numbers of elderly people are approximately 28 700, 17 200 and 23 300, respectively. The domiciles of the majority of individual suicides were allocated to their respective districts. A small remainder were included in an outer district, in cases where the person's home address was just outside the city boundaries, although their death had been considered by the Manchester Coroner. South Manchester is divided into Wythenshawe (13 500 elderly) and Withington (15 200 elderly).

South and North Manchester had been served by specialised old-age psychiatry services throughout the period under consideration. A similar service began in Central Manchester in 1982/83. The service has been comprehensively described previously (Jolley & Jolley, 1991; Lennon & Jolley, 1991).

It is the function of the coroner to examine the causes of unknown and unnatural deaths. To facilitate this process, a considerable amount of information is obtained in the form of depositions, from which we transcribed the relevant information. The basic demographic data included the age, gender, address, previous occupational status, marital status and previous living arrangements. The location of the suicide and method employed, along with the type of drug used in overdosage, were recorded. Statements from spouse, relative or neighbour of the deceased, describing their concerns and problems in the immediate period before the suicide, were usually available. Often there was a statement from the deceased's general practitioner (GP) which noted the occasion when they were last seen, what medication was prescribed and in what dosage, and gave a description of their mental state and possible relevant aetiological factors. Where the person had been in contact with a hospital service, the doctor concerned (sometimes a consultant psychiatrist) provided a detailed report on their physical and mental state, considered diagnosis, treatment, etc. The record always includes a post-mortem report and toxicological serum analyses of drug and alcohol levels. The contents of suicide notes, if any, were recorded in full.

All elderly people who had committed suicide and who had previously been in contact with the Old Age Psychiatric Services in the South District had their case notes scrutinised.

Table 2
Age/sex distribution and suicide rates of elderly Manchester residents

Age (years)	Men ($n=49$) No.	Rate[1]	Women ($n=51$) No.	Rate[1]
65–69	14	3.0	18	3.1
70–74	17	5.2	14	2.5
75–79	12	4.5	12	1.5
80–84	3	2.0	7	2.5
85–89	3	6.0	0	–

1. Suicide rate/1000 elderly/10 years.

Results

Demographic findings

Frequency, rates and geographical distribution

The numbers of suicides occurring annually in each district are shown in Table 1. At a district level, suicide is an uncommon event and its annual incidence is subject to wide fluctuations.

The suicide rates in the South, Central and North Districts over the 10-year period of the study were calculated (South 37/28.7 = 1.3, Central 16/17.2 = 0.93, North 34/23.3 = 1.46) and no significant difference in rates emerged. Within the South District, however, the rate in the Withington Sector (26/15.2) was significantly higher than that in the Wythenshawe Sector (11/13.5) ($\chi^2 = 4.44$ $P < 0.05$).

Age and gender

Forty-nine men and 51 women were included, with a mean age of 73 years (range 65–92). Rates among men aged 70–80 years were higher than among women, which is in line with expected national suicide rates for the elderly.

Marital status

When marital status was analysed, the number of suicides among elderly men showed that a higher number than expected were widowed and single; marriage appeared to be a protective factor. No statistically significant changes were evident in the female cohort.

There were two examples of suicide pacts, both involving married couples.

Ethnic origin

With regard to the country of origin of the sample, 89% were of United Kingdom nationality; the remainder included three Polish, two Chinese and two Indian nationals. No significant increase among any of the ethnic minorities emerged when compared with the ethnic origin of the elderly population.

Domicile

Eighty-nine suicides took place at the individual's home. Of the remainder, two deaths were of hospital in-patients. There were no psychiatric in-patient suicides in this cohort. At the time of their suicide, 49% were living alone; two persons were residing in Nursing Homes. Living alone did not emerge as a statistically significant variable in this study, as census data estimated that 50% of persons of pensionable age were living alone in the area studied.

Method employed

The methods of suicide employed were: drug overdose 44%, hanging 24%, asphyxia 12%, jumping from height 8%, drowning 6%, motor vehicle exhaust gas 1%, and other methods 5%. Suicides of men showed a preference for more violent methods, as expected, with 41% dying by hanging as compared to 7% of the women. Deaths from drug overdose accounted for 67% of the women and 18% of the men.

Drugs used in overdosage

Of the 44 suicides from drug overdosage, 21 (48%) involved the use of analgesics, which include paracetamol, aspirin and dextropropoxyphene/paracetamol combination (distalgesic). Benzodiazepine tranquillisers and hypnotics were used in 10 cases and barbiturates in another 10 cases. Antidepressant drugs were implicated in only five suicides; these were all tricyclic compounds (two amitriptyline, two dothiepin and one imipramine).

Physical health

Most of the cohort had exhibited problems with their physical health. Medical diagnoses were obtained from GP and/or hospital records. In around 65% of the sample evidence of recorded ill health at the time of death had been recorded, with a wide variety of conditions. Although the data did not allow for the degree of severity to be easily quantified, some conditions deserve particular mention. With regard to malignant disease, there were no cases of individuals suffering from terminal cancer in this cohort, although one patient with negative postmortem findings had been involved in

a recurrence. One was found, postmortem, to have a lung carcinoma, but appeared unaware of the diagnosis before death. Severe cardiovascular disease existed in 8% and 4% were described as bedbound. Within the preceding 12 months, 23 individuals had been hospital in-patients for the investigation and treatment of physical disorders. Twenty-seven per cent of the sample had complained of 'pain', described as 'severe' in 16%. It was not possible from the data to classify the aetiology of pain symptoms further.

Psychiatric illness

Depressive illness

Individuals were considered likely to be suffering from depressive illness if either a psychiatrist or general practitioner had made such a diagnosis following a recent examination of their mental state, if they were currently being treated with antidepressant medication, and where the clinical profile described by relatives etc. was strongly suggestive of depressive disorder. The latter criteria required the description of at least two major depressive symptoms and/or corroboration of an apparent depressive illness from two or more respondents. Those who appeared to have bereavement reactions were excluded, along with those cases where there was limited information–i.e. one relative stating only that the individual appeared 'depressed'. Those with physical illness with little mention of affective symptoms were also excluded. It is appreciated that the nature of these data does not facilitate diagnoses along operational lines, and it was not possible to utilise validated rating scales on the variable, retrospective information.

As a result, a total of 61% of the sample were considered to have a clinically recognisable depressive illness before they died.

There appeared to be no significant difference in the prevalence of depressive illness within the respective districts.

Other psychiatric conditions

One case had a previous diagnosis of paranoid schizophrenia, one had a diagnosis of dementia and three were considered alcohol-dependent.

Previous suicide attempts

Of the cohort, a total of 31% had a history of previous suicide attempts, with drug overdoses being the method employed almost exclusively. In 14% of cases, these had occurred within the preceding 12 months of the actual successful suicide.

Table 3
Recorded contact with psychiatric services (by district)

	South ($n=37$)	Central ($n=16$)	North ($n=34$)	Central ($n=13$)	Total %
Within 1 week	2	1	2	0	–
Within 1 month	6	2	5	1	14
Within 6 months	8	2	7	3	20
Within 1 year	9	4	10	3	–
Previous 1–20 years	15	5	14	6	–
No contact documented	22	11	20	7	60

Psychotropic medication

The study revealed that 54% of the cases were being prescribed some form of psychotropic drug at the time of their death: of these, 63% were women and 45% were men. Thirty-three were prescribed benzodiazepines, in the form of either anxiolytics or hypnotics. Three persons received prescribed barbiturates. A total of 25% were prescribed antidepressant medication, often in combination with other psychotropic drugs. One person was maintained on lithium. On postmortem analysis, 12% were found to have alcohol present in their serum, in six cases over 80 mg%.

Suicide notes

Forty-three per cent (39% men, 47% women) left a suicide note.

Contact with medical services

Primary care services

Their GP had seen 19% of the cohort in the week before their suicide, 43% within the previous month and 58% within the previous 6 months; 12% had last been seen over 6 months before their death, and no dates were available concerning previous contact in 30% of the sample.

Secondary care services

Contact with psychiatric services in the month before death was recorded in 14% of cases, with 20% being seen within 6 months. A lifetime history of psychiatric treatment was recorded in 40%. Sixteen individuals had received psychiatric in-patient care in the 12 months preceding their death.

Levels of previous contact with secondary services were recorded for each District service (Table 3). There were no significant differences between the districts when patterns of contact were compared. In South Manchester, however, only one out of 11 suicides in the Wythenshawe Sector were in contact with the Old Age Psychiatry service, compared with seven out of 26 in the Withington Sector (odds ratio 0.27).

Discussion

Recent focus on suicide has been criticised on the grounds that it is a relatively rare event. The numbers of elderly suicides in the the districts we studied each year were low, e.g. 1–2 per year in the Central district over the past decade, yet official suicide statistics underestimate the extent of the phenomenon. Deaths from external causes similar to suicide where an accidental or undetermined verdict is returned would frequently be considered as 'hidden suicides' by clinicians. A broader study which included these categories would give a more realistic analysis of the scale of this problem. Numbers fluctuate considerably from year to year and any conclusions regarding the efficacy of preventive strategies will need to be examined over an extended period.

When considering rates between and within the respective districts, no obvious discontinuity was found in the rate of suicide coincident with the establishment of the service in Central Manchester in 1982/83, nor was there any difference in rate between districts. There was however a marked difference in suicide rates among the elderly of the two sub-populations of South Manchester, both served by the same specialist psychiatric service. This suggests that rates may be influenced predominantly by factors inherent in the population served and/or by the mechanism of referral to specialist services (these issues will be considered in a future paper).

The demographic findings generally replicate previously established characteristics, with some notable exceptions. Separated and widowed men were significantly over-represented compared to the general elderly population in the area, but living alone did not emerge as a statistically significant variable.

The importance of co-existent physical ill health is well recognised as a risk factor, along with pain symptoms (Barraclough, 1987). The study supported this finding, demonstrating that around 65% of subjects showed evidence of physical illness at the time of death and that 23% had been in-patients in the preceding year. The relationship between physical ill-health and depressive illness is well established. Although certain physical disorders have a stronger association with suicide than others, the association is seldom direct and is largely mediated through mood disorder (Barraclough, 1987). This consequently necessitates effective communication between geriatricians, old-age psychiatrists and GPs.

Depressive illness

The importance of depressive illness as an antecedent to suicide in the elderly cannot be overstated. The study of Barraclough *et al* (1974) of 100 cases of suicide emphasised the importance of mental illness and considered that of the 30 elderly suicides in the sample, a retrospective diagnosis of depressive illness was present in 87% (Barraclough, 1971). Later research, utilising interviews with informants and applying diagnostic criteria to 40 suicides over an age of 59 in a Swedish female population, found that 65% were depressed, of whom 43% had a diagnosis of major depression (Asgard, 1990). These findings are reinforced by the results of studies of attempted suicide in the elderly, where estimates of depression in the order of 60–90% are reported (Nowers, 1983; Pierce, 1987; Merrill & Owens, 1990).

The present study, in which the overall estimated prevalence of depressive illness in the cohort was 61%, is then in line with previous findings. This result may underestimate the true prevalence, since those individuals with bereavement reactions were excluded, and recorded data, particularly on the earlier inquests, was sometimes limited. The prevalence of depressive illness is higher among older people committing suicide than among younger people (Barraclough *et al*, 1974).

Contact with services

At least 43% of the sample had consulted their GP in the month before death. A recent study from the county of Avon demonstrated that elderly suicides are far more likely to seek help from their doctors than are younger suicides (Vassilas & Morgan, 1993). Only 20% of our sample had contact with psychiatric services within 6 months of their death (14% in the previous month). There were no significant differences between levels of contact in the different districts, although in one half of South Manchester less than one in ten individuals had been in touch with specialist services. These overall findings are similar to those reported in two previous studies, where, for example, levels of contact in the last 3 months of life were 20% and 26% respectively (Cattell, 1988;

Vassilas & Morgan, 1993). They indicate that specialist old-age psychiatry services are in contact with only a small proportion of individuals who go on to commit suicide, which has important implications for preventive strategies.

There are reasons for assuming that health services have a clearly identified role to play in the prevention of suicide in the elderly, and this may theoretically prove more effective than with younger people. These reasons may be summarised as follows.

The elderly have the highest prevalence of clinical depression and physical ill-health, both of which may be amenable to treatment from health personnel. The elderly appear to make more contact with primary care agencies before their death, so offering opportunities for intervention. In contrast, suicides among younger people may be associated with a higher prevalence of antecedents which make effective intervention more difficult, i.e. less contact with medical services and higher elements of impulsivity etc.

Primary health care services

Since a substantial number of these people see their GPs before their death, the potential role of the primary care service in suicide prevention may be of critical importance. MacDonald (1986) concluded that GPs recognise elderly depressives, but are weak in their subsequent management. It seems likely that the greatest difficulties arise because of the 'understandability' of depression among older patients when viewed through the eyes of their young GPs. This is in keeping with our finding that only 25% of patients were prescribed antidepressants and only one was receiving lithium, findings similar to a recent study in the general population (Isaacson *et al*, 1994).

The potential role of primary care agencies in suicide prevention has been the focus of recent debate. The studies of Rutz *et al* (1989, 1992) suggested that a systematic postgraduate education programme for GPs designed to improve the diagnosis and treatment of depressive disorders significantly decreased the frequency of suicide. Michel & Valach (1992) found that such training programmes significantly changed GPs' knowledge and attitude to suicide. Studies similar to those of Rutz *et al* clearly need to be replicated on different populations to verify, or otherwise, this important observation.

The results of our study emphasise that prevention of suicide among the elderly can only be effective if community-based services take the lead, since the vast majority of deaths occur at home rather than in hospital.

Psychiatric services

For psychiatric services there are reciprocal issues. Are such services sufficiently available for consultation? How can we encourage and facilitate referral? How should we organise the audit of suicides in a multidisciplinary manner, and with the participation of practice-based staff, home-care agencies, or voluntary organisations who are in regular contact with the 'at risk' population? Will screening for depressive illness facilitate improvements in recognition and treatment? How do services reach out to that group of vulnerable, self-isolating individuals who do not contact their GP (40%), and what factors prevent them from seeking help?

Related issues

Any consideration of the prevention of suicide needs to consider a range of other issues. The vulnerability of those living alone needs to be addressed and the influence of adequate and stimulating day-support systems requires evaluation. The ready availability of toxic drugs requires consideration: analgesic drugs, including aspirin, paracetamol and dextropropoxyphene are now the commonest drugs used as means of suicide by the elderly (Lindesay, 1991). Their use further emphasises the relationship between suicide in this age-group and the experience of pain which may have its origin in physical pathology, but is almost certainly amplified by depressed mood. The hoarding of old prescriptions is a phenomenon which receives little recognition, and the ready availability of these drugs which can be lethal in small concentrations suggests that it is worthwhile to scrutinise the household drug supply of the vulnerable. Similarly, the type and method of prescribing of antidepressants requires monitoring, and the use of less toxic antidepressants may be helpful in individuals at risk.

Conclusion

This study confirms that suicide in the elderly is related to the presence of depression and physical illness, often associated with pain. It provides no evidence to support the idea that differences in suicide rates between populations can easily be related to differences in service provisions; overall, the suicide rates among the elderly of Manchester are similar in the three Health Districts, yet within

one District one sector has twice the rate of the other sector. Despite their 'community' orientation, specialist services were seeing less than a quarter of the elderly depressives who went on to kill themselves, and the majority of patients had not seen their own doctor during the month before they died. Services are failing at the first, second and third filters which Goldberg & Huxley (1980) hypothesise in their model of pathways to care. Patients and/or their families don't see them as depressed in a way that constitutes illness, GPs don't prescribe for the depression themselves, and they refer relatively few patients to specialist services.

Thus, if we are to make a worthwhile impression on suicide rates in the elderly, we shall have to facilitate passage through these filters. This implies a programme of public awareness, the development of outreach activities, and, fundamentally, encouraging health care professionals to see psychiatric and physical illness as treatable and to develop specialist teams to address the unmet needs of the elderly depressed.

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Howard Cattell, MRCPsych, Wrexham Maelor Hospital and The North Wales Hospital; **David J. Jolley**, FRCPsych, Withington Hospital, Manchester

Correspondence: Dr Cattell, Department of Old Age Psychiatry, Wrexham Maelor Hospital, Croesnewydd Road, Wrexham, Clwyd LL13 7TD

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