

Non-fatal deliberate self-poisoning in Dublin's North Inner city - an overview.

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Abstract

It is almost three decades since a survey of attempted suicide in Dublin City Hospitals was published. In 1962, 159 cases in the City of Dublin and Borough of Dun Laoghaire were studied and reported.¹

Over a six month period (November 1989-April 1990) 147 cases of deliberate self-poisoning were admitted to the Mater Hospital, Dublin, of which 100 case notes were appropriate for examination. In 1973, a six month survey of attempted suicide was carried out at the Mater Hospital, Dublin² where 38 patients were admitted following non-fatal deliberate self-poisoning.

In our study, the female to male ratio was 2:1, 50% of cases took more than one drug type, benzodiazepines being the most commonly ingested compound. Alarming over a quarter (28%) of females under 25 had overdosed on paracetamol either alone or in conjunction with other compounds. Alcohol was consumed in 46% of all cases. 40% of cases involved a past history of deliberate self-poisoning and 60% had a past history of psychiatric intervention.

Our survey outlines current trends in deliberate self-poisoning in Dublin's North Inner City. We have compared our 1990 survey to the similar survey conducted by our unit² seventeen years ago. Several characteristics remain unaltered. The number of overdoses has almost trebled. We have noted a sharp rise in unemployment, alcohol abuse and psychiatric history among female overdoses. We have noted the disturbing introduction of paracetamol overdose particularly among young females (25%). Finally we have documented the introduction of overdosing amongst the homeless population which did not exist in the 1973 survey, but which accounts for 12% of our survey. A greater public awareness of this problem, as well as continued research is recommended from our findings.

Introduction

Deliberate self-poisoning constitutes a significant proportion of Accident and Emergency, medical and psychiatric staff workload admissions.⁴ Little is known about the patterns and precipitants of this phenomenon in Dublin city. The location of the Mater Hospital (MMH) as the only hospital in Dublin's North Inner City, coupled with the Department of Health decision to provide a 24 hour, seven day a week accident and emergency service since September 1989, provided us with an opportunity to review the nature of deliberate self-poisoning in a particular community and to postulate for ourselves and other health care planners, how we should develop our clinical service and research options.

Method

The study reviewed retrospectively the charts of all patients admitted to MMH between October 1989 and April 1990, with a

diagnosis of self-poisoning. Cases were identified through the casualty register (N - 146) and cross checked with a separate overdose consultation register in the Department of Psychiatry.

Patients included in the survey were those who deliberately took a drug overdose, were admitted to hospital and had a psychiatric assessment (n=100). Those patients admitted to hospital, following iatrogenic drug toxicity or 'recreational' drug abuse were excluded. Also excluded were an unknown number of cases who discharged themselves, or were discharged from accident and emergency without psychiatric assessment. Finally, patients admitted to hospital for treatment of deliberate self-harm other than deliberate self-poisoning were also excluded. Following the design of a simple chart review questionnaire, the data was collected from the case notes.

Consciousness on hospital admission was classified as 'alert', 'drowsy', 'unrousable', 'coma' for the purposes of the survey. Early treatment with or without antidotes was noted. Patients

were admitted to the Coronary Care Unit/Intensive Care Unit if they needed cardiac monitoring or following intubation. Details of substances of overdoses were recorded from the case notes. It was not possible to document toxicology for the survey as it had not been recorded in some of the case notes. Where no reference was made, it was coded as 'no past psychiatric history'.

Results

A total of 100 cases of deliberate overdose were studied, 67 females and 33 males (ratio 2:1). Females exceeded males in all age groups except the 45-49 age group., (Figure 1) and 30% of the population were under 20.

Social Profile - There was a high rate of unemployment among patients, 61% of males and 53% of females available for work were unemployed (this excludes those in full time education, residents of institutions and those engaged in household duties). Educational standards were also poor, 78% had completed primary school only.

At the time of the overdose, seven females and five males were homeless or staying in a hostel for the homeless, two males were in prison, another in garda custody and four females were in-patients of psychiatric hospitals. Eleven patients (six females and five males) lived alone.

Past psychiatric history - 60% of all patients had in the past received or were receiving psychiatric treatment (41 females and 19 males). Twenty-four females and 10 males had one or more admissions for inpatient psychiatric treatments, 45 had attended psychiatric outpatients in the past. (Past treatment is defined as any treatment received by the patient in the past which had been terminated either by the patient or doctor) 50 were receiving some form of psychiatric treatment at the time of the overdose, however, 12 of these were being managed by their G.P. only.

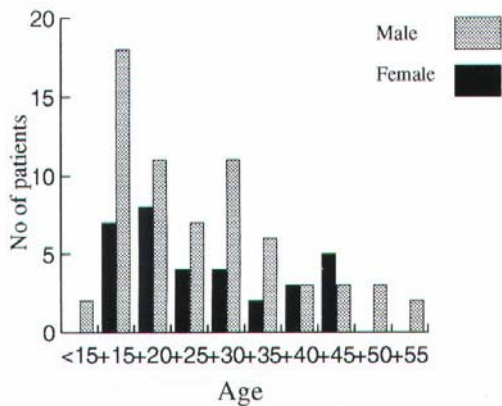
Substance abuse was common among the patient group, 42% of males and 19% of females admitted to alcohol abuse or were described by psychiatric assessors as alcohol abusers. 12% of patients admitted drug abuse, only one of these stated he had used I.V. drugs.

18 patients reported a family history of psychiatric illness/treatment (alcoholism cases were not included in this since details were often vague and in most cases professional treatment had not been obtained). Suicide of a relative or close friend was reported in two cases.

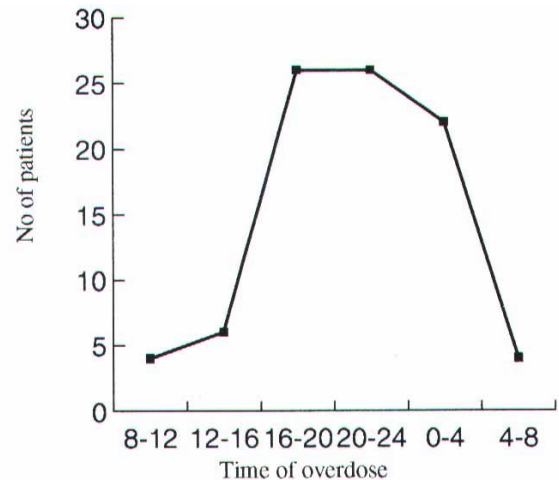
Previous deliberate self harm - Forty patients had a past history of self harming behaviour, most commonly overdose; however other methods e.g. lacerations and hanging also been attempted. Ten of these were identified as multiple O.D. patients (five or more previous overdoses). This group expressed higher levels of suicidal intent than average, eight had in the past received, and two were receiving inpatient psychiatric treatment.

Circumstances of the overdose - Wednesday and Thursday were the days on which most overdoses took places, Friday the

Graph 1 - Age distribution of patients admitted to MMH following OD in 1990



Graph 2 - Time of drug O.D. prior to MMH admission in 1990



least. There was a delay between the incident and attendance at A&E of an average 3.7 hours. (Range 0.5 - 14.5 hours) (Figure 2). 51 patients arrived by ambulance, 49 used other modes of transport.

Drug taken - A wide range of substances were consumed; most commonly benzodiazepines. Polydrug overdose was common, 50% took more than one drug.(Figure 3) 67% of males and 36% of females consumed alcohol before or with the overdose.

Drugs appeared to be readily available to the patients. 20 males (61%) and 35 females (52%) ingested a drug which had been prescribed for them, however not all were current prescriptions. Other drugs (both prescription and non prescription) were often obtained in the patients home or from a friend. Only two patients reported purchasing drugs specifically for the overdose, both took paracetamol containing compounds.

Hospital admission - On admission the majority of patients (62%) were alert, only 10% were classed as unrousable or comatose. Early treatment consisted of preventing further absorption of the drug if possible by induced emesis or gastric lavage, and installation of activated charcoal. This treatment is best administered as soon as possible after the overdose. It is of minimal benefit if more than four hours have elapsed since

Table 1 - Comparison of demographic and clinical features of suicide attempts by drug over dose admitted to Mater Hospital in 1973 and 1990

	1973*	1990†
Number of admissions	38	100
Under 25 (%)	40	47
Previous attempt (%)	52	40
Length of admission (average days)	13	3-8

	Male	Female	Male	Female
Homeless/Hostel	0	0	7	5
Unemployed (%)	50	12	61	53 ¹
Past psychiatric history (%)	40	30	50	60
Alcohol consumed (%)	50	4	67	36 ²
Drug taken	Tricyclic antidepressants Phenothiazines Barbiturates Asprin	Benzodiazepines Phenothiazines Other prescribed Medicines Paracetamol		

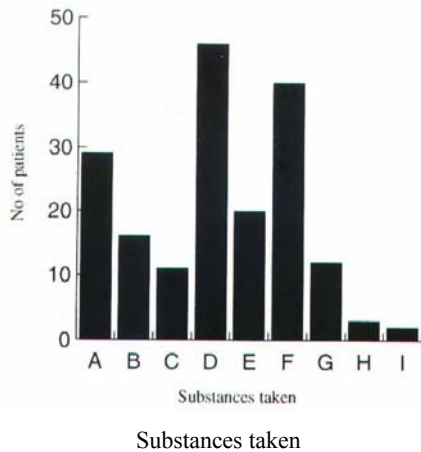
¹ chi² analysis:- chi 2= 9.1 P<0.002

² chi² analysis:- chi 2= 5.71 P<0.02

* Corbett, O'Flaherty, Malone J.P.

† Malone, McCormack G., Malone J.P.

Graph 3 - Substances of overdose in suicide attempters admitted to MMH in 1990



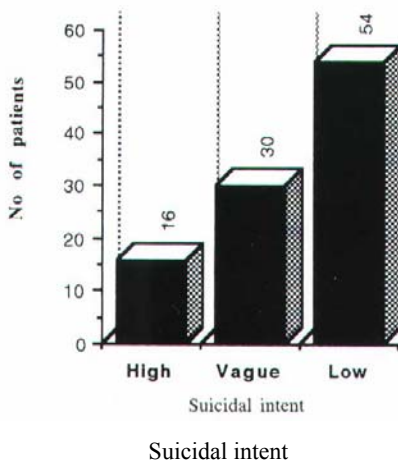
Key - A = Non-steroidal analgesics, B = Paracetamol, C = Anti-psychotics, D = Benzodiazepines, E = Tricyclic antidepressants, F = Other prescribed drugs, G = Other psychotropic drugs, H = Over the counter drugs, I = Chemicals (non drug)

ingestion. Some drugs however delay gastric emptying, including those with anticholinergic effect (e.g. Tricyclic antidepressants) and salicylates which can cause pylorospasm. In cases of overdoses of these drugs, stomach wash out (S.W.O.) or emesis may be of benefit if instituted more than four hours later. Patients with impaired consciousness required intubation for the above treatment. 54% had S.W.O., 22% had Ipecac and 24% had neither.

Specific antidotes were administered if the patient was believed to have taken toxic amounts of certain drugs. Flumazenil was administered if there were signs of benzodiazepine toxicity (seven patients), acetylcysteine was given as prophylaxis against liver damage in cases of perceived significant paracetamol overdose (eight patients). This was subsequently discontinued if toxicology screens showed non hepatotoxic levels. The opiate antagonist, naloxone was given to one patient.

Suicidal intent and motivation - Patients were divided into three groups, high vague and low intent. (Figure 4) The high intent group were those who expressed an unequivocal wish to die; planning and carrying out what they believed to be a lethal overdose. The vague group include those who were at the time of assessment not suicidal but whose intentions were unclear. Those with low intent included overdose described as 'impulsive' and 'parasuicidal' in nature on admission. Many

Figure 4 - Suicidal intent in those admitted to MMH in 1990.



reasons were given as precipitating events for the overdose, most commonly family and relationship problems.

Outcome - No patient in the study died from the effects of the overdose, however cases who died before reaching hospital or in the A&E Department would not have been included in the study. Thirteen patients were admitted to C.C.U. or I.T.U. chiefly for cardiac monitoring because of ingestion of drugs with arrhythmogenic potential. Sixteen patients required further medical treatment after admission from the A&E Department, however the majority (71) were admitted for observation and psychiatric assessment. Admissions were usually short, the average stay was for 3.8 days, 59% of patients staying three days or less (to the next nearest whole day).

Discharge was delayed not alone by medical complications but also if psychiatric or social problems prevented the patients from returning home. Six patients discharged themselves against medical advice.

Discharge - After acute medical care and psychiatric assessment, 23 patients were transferred to another facility for in-patient psychiatric care. Of those discharged home, seven required no further follow up, 22 were referred to other psychiatric O.P.D. (usually a clinic which they had attended previously), and two were referred to other centres. The remainder (46 patients) were to attend the M.M.H. psychiatric O.P.D., of these 21 (46%) attended and 25 (54%) did not.

Discussion

Interpretation of our results is reliant in part on an understanding of Dublin's North Inner City demography. It is an area of high unemployment, crime and poverty. Within two miles there is a large psychiatric hospital (St. Brendans) and a smaller psychiatric hospital (St. Vincents') where a considerable number of our patients surveyed had attended in the past. There is also a large prison (Mountjoy) and several community hostels close to the hospital.

Dublin North Inner City has socially disintegrated in the past two decades. Unemployment, homelessness, poverty and powerlessness have contributed to certain patterns of overdose behaviour peculiar to that community, and the under 25 female age group are particularly at risk.

In addition to comparing our results to those of Corbett et al 1973 (Table 1), it is appropriate to make some comparison with McCarthy and Walshe's survey of 1962 even though they surveyed all Dublin City admissions. However, at the time most of Dublin's hospitals were centrally situated and would have served the poorer inner city areas.

Emerging from our survey in stark contrast to the 1960's is a large increase in percentage of female under 25 overdoses- 1990 (51%), 1973 (40%), 1962 (15.2%). This rise has also been noted in recent surveys from other centres.^{3,8}

Alcohol consumption in association with drug overdose has risen significantly since 1973, being statistically significant in females. The figure of 46% for combined sexes is considerably higher than the average figure (30%) quoted in more recent comparable surveys from other centres.^{5,6}

Not surprisingly the substances of abuse have changed. Gone are the barbiturates of the 1960's and 70's to be replaced by benzodiazepines (46%). It was concerning to note that 39% of overdoses were by non-psychotropic agents which had either been prescribed for the patient or for another family member.

Of even more grave concern was the incidence of paracetamol overdose in the under 25 year old female (25%) and although it contrasts the Oxford experience,⁹ it is similar to the Edinburgh Profile.⁷ There were no paracetamol overdoses in the 1973 survey.²

Given the known lethality of paracetamol to the medical profession there is great ignorance amongst the general public as to its toxicity. Paracetamol overdose was common among those with low suicide intent. As both paracetamol and other medicines were frequently found by the patients in the home, it must be continually stressed to patients and their relatives, to throw out unwanted or out of date pills of any sort. It must in part be the doctors responsibility if patients prescriptions are being changed to enquire about the unused tablets prescribed

previously. It is clear that there needs to be a public awareness campaign with regard to paracetamol products. They should at least be only available in pharmacies; and packets should carry a clear warning with regard to potential fulminant hepatic failure in overdose. The addition of N-acetyl cystine to paracetamol preparations is worth considering.

The greater frequency of overdoses on Wednesdays and Thursday's is possibly related to a higher alcohol intake on those days, following receipt of social welfare payments, and the high incidence of evening/night time overdoses may also be related to alcohol consumption habits. These findings have implications for deployment of resources and warrant further investigation.

The degree of deprivation and poverty is clearly witnessed from the demography of the population studied. The 78% primary education completed only figures, merely adds educational to other forms of deprivation experienced, and remarkably has not been highlighted in any other surveys completed on deliberate self-poisoning, which have tended to focus on unemployment as a major aetiological factor.⁷ We suggest that poor education and unemployment reflect the social disintegration of this community. The significant increase in unemployment in females who overdose in comparison to 1973 (Table 1) has profound psychosocial and political implications for the future of our services, and highlights these women as a high risk sub group.

It is possible that in this deprived subculture limited educational attainment restricts verbal communication skills, and in times of stress, an overdose is a non-verbal signal of despair, which can be related to, by others, and need not necessarily indicate overt psychopathology. The meaning of the gesture particularly in the low lethality group was often seen as an impulsive means of gaining control over their destiny. The high lethality group tended to be more psychiatrically disturbed. We would discourage the 'parasuicide' label as it lulls clinicians and relatives alike into a false sense of security. We would advocate that drug overdoses should be documented as deliberate self-poisoning with either low, moderate or high suicidal intent, as intent varies from one gesture to the next.

It is clear from our survey that in contrast to 1973, the homeless population now accounts for a significant proportion of our patients, and reflects the growing concern of increased psychiatric morbidity and hopelessness amongst this deprived population subgroup.

The clinicians role was generally one of support and empathy, assisting the patients in verbalising their distress and frequently meeting and mediating with relatives and screening for overt psychiatric pathology. The prudent and prompt medical treatment received by these patients using antidotes when clinically appropriate, was of a high standard and was reflected in the zero mortality rate for patients admitted to hospital following deliberate self-poisoning in the period surveyed.

It draws our attention to the importance of such a hospital as ours in the community, and the role it plays in these peoples lives. The 50% follow up through our out-patients Department is encouraging. These patients will be the subject of future research, particularly the pattern of attenders versus non-attenders of deliberate self-poisoning.

In conclusion, we studied a population from Dublin's North Inner City, socially deprived and uneducated with little control of their domestic or financial futures. Not only are they socially disadvantaged they also suffer considerable psychiatric morbidity and abuse alcohol and other available medicines. The number of overdoses to our Services has almost trebled in 17 years which can be explained in part only by our hospital now being the only hospital within the Dublin North Inner City area. In 1973 there were two other inner city hospitals. Paracetamol overdose is a significant concern especially amongst the young. Our findings with regard to deliberate self poisoning amongst the homeless population highlights the problem of the psychological, as well as physical well being of this growing community. We have identified a significant increase since 1973 in unemployment and alcohol abuse prior to overdose in females and would classify these people as a high risk sub group

in our community. There are many different subcultures within a city and therefore different aetiological factors in deliberate self-poisoning must be considered within different communities, and this warrants further research. Epidemiologically, high risk sub groups and repeaters need to be recognised and closely monitored. Our initial conclusions from this study will need to be assessed in larger longitudinal studies, and in collaborative work with other centres.

Acknowledgements

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