Repeat non-fatal suicidal behaviour at Johannesburg Hospital

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Objective. To describe the characteristics of non-fatal suicide behaviour (NFSB) in a group of patients and to determine factors, if any, that may be associated with repetition of this behaviour.

Method. The study included all patients treated for NFSB at Johannesburg Hospital during the period August 2002 - October 2002. The information was gathered by means of a structured questionnaire designed to evaluate characteristics of the behaviour.

Results. The study sample comprised 43 patients with NFSB (mean age 29.7 years, range of 16 - 75 years), of whom 26 (60%) were female. Sixty-three per cent of the patients overdosed with medication and 33% ingested household poisons. Events that precipitated the event included relationship problems (70%), illness (12%), financial difficulties (9%), and depressed mood (9%). In 65% of patients the behaviour was impulsive. Factors associated with non-fatal repetition included being in the 18 - 30-year age group (76%) ($\chi^2 = 6.74$, $p < 0.05$); being female (90%) ($\chi^2 = 4.75$, $p < 0.05$); having children (90%) ($\chi^2 = 4.72$, $p < 0.05$); a past psychiatric history (50%) ($\chi^2 = 4.08$, $p < 0.05$); and the current attempt deemed medically serious (50%) ($\chi^2 = 6.67$, $p < 0.05$).

Conclusions. NFSB is a major problem in South Africa and the incidence is still increasing. Hospital-based interventions following admission are recommended to reduce repeat attempts in such patients. Significant factors associated with non-fatal repetition include among others, a history of a previous medically serious attempt and/or a known psychiatric illness.

About one-third of the general population has, at some point, experienced thoughts of self harm.[1 3] Deaths resulting from homicide and unintentional injury usually outnumber those resulting from fatal suicidal behaviour (FSB).[4] Although it is estimated that worldwide about 25% of FSB is preceded by non-fatal suicidal behaviour (NFSB) in the preceding year,[5] importance of the latter is usually under-estimated.

There is considerable debate about the underlying causes and the manner in which biological and psychological factors interact in NFSB. Reported risk factors for this behaviour include a history of a psychiatric disorder,[6-9] advancing age,[10-14] living alone[15] or in a low-income area,[10] current mental illness,[11] somatic illness[16-19] and the abuse of alcohol and drugs.[15] Other factors are exposure to various forms of stress[14,20 25] (adversity, discrimination, economic hardship, marital problems, and social disputes). There is also a significant association between having a friend or relative who committed FSB and the individual's attitude towards this behaviour.[26] Young females have much higher rates of NFSB[23] but lower rates of FSB than males.[10,11,21 22 27 28]

Common methods employed in NFSB include the ingestion of harmful substances (paraffin, pesticides or battery acid[22 25]), overdosing with medicines,[23 24] use of sharp weapons, and attempted hanging.[26] In many cases the behaviour can be categorised as demonstrative rather than genuine.[25] The major intentions or reasons given for committing this behaviour are 'failing to solve problems' and 'mental illness'.[26]

A previous episode of NFSB ranks as one of the major risk factors for future FSB, as does recent discharge from inpatient psychiatric care.[9,26 29] About 1 in 6 patients repeat the behaviour over the next year, and 1 in 4 after 4 years. Non-fatal repetition is also associated with unemployment, increasing severity of suicidal ideation, previous psychiatric treatment and some personality disorders.[30,31]

South Africa is a society in a state of transition and its citizens have been and continue to be severely traumatised.[32] NFSB appears to be on the increase as people struggle to come to

terms with the effects of former South African racial policies, and related sociocultural, socioeconomic and other pressures. It is necessary to ascertain the characteristics of NFSB across our various sociodemographic groups. In a previous report[33] a group of patients with NFSB was compared with a control group without this behaviour. The aim of the present study was to describe, in this same group of patients, the characteristics of the NFSB and to determine factors, if any, that may be associated with repetition of this behaviour.

Method

The study subjects included all patients treated for NFSB at the Johannesburg Hospital adult medical emergencies ward during the period August 2002 - October 2002. They were interviewed approximately 24 hours after admission or when medically stable.

Assessment

After obtaining informed consent psychiatry registrars interviewed the patients. All the interviewers received training before the study to improve inter-rater validity and reliability. Data were obtained using a structured questionnaire designed to evaluate subject characteristics (marital status, family history, employment status, highest level of education achieved, current accommodation, etc.) and factors associated with the behaviour (method employed, precipitating event, premeditation, leaving a suicide note, feelings about the outcome, etc.) The seriousness of the attempt was determined by the subject's physical status and by means of laboratory investigations.

All subjects gave written informed consent to participate in the study (in the case of subjects under 18 years of age, consent was obtained from the parents, with assent from the patient). The study was approved by the Committee for Research on Human Subjects, University of the Witwatersrand.

Statistical analysis

Descriptive statistics of variables were computed as mean and frequencies (count and percentages). The two-sample *t*-test was used to compare the continuous characteristics (age) between the groups. The chi-square test and Fisher's exact test were used to determine the relation between categorical characteristics. Pearson's correlation coefficient (r) was used to describe any correlations between variables. All analyses were done using the Statistical Package for Social Sciences 10.0 for Windows (SPSS Inc., Chicago, Ill.) A value of $p < 0.05$ was considered significant.

Results

The subjects comprised 43 patients with NFSB (mean age 29.7 years, range 16 - 75 years), of whom 26 (60%) were female.

Sixty-three per cent of the patients overdosed with medication while 33% ingested household poisons (Table I). The classes of medication used for overdosing were influenza preparations (23%), benzodiazepines (17%) and analgesics (23%). Events that precipitated the behaviour included relationship problems (70%), financial difficulties (9%), illness (12%) and a depressed mood (9%). The behaviour was often impulsive (65%), carried out when the patient was alone (79%), and occurred most commonly during the daytime (67%). Only 2 patients left a note of their intention.

Seventy-two per cent of the attempts were deemed not medically serious and the majority of subjects were discharged from hospital for ambulatory care. Sixty-five per cent of the patients indicated that they had a desire to die at the time of attempt while 21% said they were trying to make a point. At the time of interview, 58% of the patients were glad that they had survived and the majority (77%) said they had no intention of repeating the behaviour.

There was a significant association between the seriousness of the behaviour and the behaviour being premeditated ($p = 0.017$), a past history of NFSB ($p = 0.005$), a family history of NFSB ($p = 0.012$), a family history of psychiatric illness ($p = 0.032$), and a history of sexual or physical abuse ($p = 0.001$).

Patients were significantly more likely to be admitted to hospital if they had a history of a previous NFSB ($p = 0.009$) or if they had a low level of education ($p = 0.039$). They were more likely to be treated as outpatients if they had a family history of psychiatric illness ($p = 0.044$) or if they had children of their own ($p = 0.004$).

Ten patients had a history of a previous episode of NFSB (Table II). Factors associated with non-fatal repetition included being in the 18 - 30-year age group (76%) ($p < 0.05$), being female (90%) ($p < 0.05$), having children (90%) ($p < 0.05$), a past psychiatric history (50%) ($p < 0.05$), and a current attempt that was deemed medically serious (50%) ($p < 0.05$).

Table I. Characteristics of non-fatal suicide behaviour in 43 patients at Johannesburg Hospital

Characteristics	*N*	%
Method		
Overdose	27	63
Influenza preparations	10	23
Benzodiazepines	7	17
Analgesics	10	23
Ingestion of poison	14	33
Other: gunshot/stab	2	4
Precipitating event		
Relationship problems	30	70
Financial	4	9
Illness	5	12
Depression	4	9
Premeditated act		
Yes planned	15	35
Short term	6	14
Long term	9	21
No impulsive	28	65
Suicide note written		
Yes	2	5
No	41	95
Alone at time of attempt		
Yes	34	79
No	9	21
Time of attempt		
Daytime (06h00 18h00)	28	65
Evening (18h00 06h00)	15	35
Serious attempt		
Yes	12	28
No	31	72
Admitted as inpatient		
Yes	19	44
No	24	56
Desire at time of attempt		
Wanted to die	28	65
Making a point/cry for help	9	21
Unsure	2	5
Feelings about surviving		
Glad to be alive	25	58
Unsure	9	21
Angry about surviving	9	21
Intention to repeat act		
Yes	2	5
No/unsure	41	95

Table II. Factors associated with non-fatal repetition

	Repeat NFSB		First attempt	
Factors	*N*	%	*N*	%
Age group (yrs)				
18 30	5	50	25*	76
30 45	2	20	7	21
> 45	3	30	1	3
Gender				
Male	1	10	16	48
Female	9	90	17*	52
Children				
Yes	9	90	17*	52
No	1	10	16	48
Past psychiatric history				
Yes	5	50	6*	18
No	5	50	27	82
Seriousness of the attempt				
Yes	6	50	6*	18
No	4	50	27	82
Intention to repeat the act				
Yes	2	20		
No	6	60	27*	82
Maybe	2	20	6	18
Outcome of the attempt				
Admitted	8	80	11*	33
Discharged	2	20	22	67

*$p < 0.05$.

Discussion

In contrast to previous reports of increasing age as a feature of patients with NFSB,[10-14] the patients in this study were much younger and predominantly in the 18 - 30-year age group. Higher incidences of this behaviour have recently been reported in young South Africans.[12-14] Younger persons may be particularly at risk because of educational and socioeconomic demands, high unemployment rates and unmet expectations.[12] Among the subjects in this study, relationship problems, financial difficulties, illness and depressed mood were reported as common precipitants of the behaviour. South Africa is undergoing rapid urbanisation (95% of our subjects lived in the city) and the stress associated with this relocation may be a contributing factor.[30,31]

Overdosing with common medicines (influenza preparations and analgesics) and the ingestion of household poisons were the most common NFSBs in our subjects. In most cities in the developing world similar medicines are often used for self-harm.[34 36] In a case series from Cape Town the majority of patients stated that they used battery acid because it was readily available in car batteries used as a power source in their unelectrified houses, and also because they were aware of its destructive effects.[21,37,38] Poisoning is a common form of deliberate self-harm and while suicidal intent is often far lower than in cases of self-immolation and hanging, the mortality rate is high owing to the toxicity of the agents used. Traditional medicines are a cause of accidental, but rarely intentional, poisoning.[39] Outside the cities these methods are relatively uncommon and their prominence is displaced by pesticides, which are often fatal.

Although the majority of our patients indicated that they had a desire to die at the time of the attempt, they were glad to have

survived and said they had no intention of repeating the behaviour. Not all people who die following acts of self-harm actually wish to die.[40-43] Instead, the acts are used to express rage or hostility, or to gain revenge by causing distress to another person. In some cultures this may be seen as the only way to express one's anger with someone.[44,45] People who do want to kill themselves often do not succeed; in contrast, others with little or no suicidal intent sometimes die as a result of their act.[46] Many factors affect the outcome, including the degree to which the toxicity of the poison was understood, the speed with which the person comes to clinical attention, and the availability of effective medical treatment.

Significant factors associated with non-fatal repetition in this study included being in the 18 - 30-year age group, having children, a past psychiatric history and a current attempt that was deemed medically serious. The link between self-harm and suicide is a strong one. Non-fatal repetition is common after a previous episode of self-harm; about 1 in 6 patients repeats the act over the next year, and 1 in 4 after 4 years. Patients who discharge themselves before completing initial management have a considerably increased rate of repetition.[47]

Interventions for patients who deliberately harm themselves are currently being evaluated. It is of concern that some patients at greatest risk of repeating such behaviour are discharged before management is completed. At Johannesburg Hospital some of the criteria for admission included a history of a previous NFSB, sexual or physical abuse, a low level of education, or if the patient had no children. In addition the behaviour was considered to be more serious if it was a first episode, impulsive, or if the patient was young, had a family history of NFSB and/or a psychiatric illness. Known factors such as unemployment, increasing severity of suicidal ideation, previous psychiatric treatment and personality disorders were not taken into consideration.

These findings emphasise the importance of optimising psychosocial management by staff in accident and emergency departments during the initial stages of treatment,[48] and the need to develop guidelines for admission to hospital.

This study is limited in its generalisability because most of our study population were inner-city dwellers presenting to the emergency room of a tertiary hospital. Some patients may have been treated/attended to in the emergency room of the hospital but were discharged home or directly to a psychiatric facility before inclusion into the study. The small sample size (43 patients) may have limited our ability to detect statistically meaningful differences when analysing for factors associated with non-fatal repetition.

Conclusion

NFSB is a major problem in South Africa and the incidence is still increasing. In suggesting effective ways to prevent this problem, we must be realistic and aware of our limited resources. However, acknowledging the seriousness of the situation is a first step towards preventing this unnecessary behaviour.

A significant factor associated with non-fatal repetition includes a past psychiatric history and a medically serious attempt. Hospital-based interventions after admission for NFSB are recommended in an attempt to reduce repetition. In South Africa a reduced number of inpatient beds has meant that medical staff are reluctant to admit patients judged to be at low physical risk; the latter are also often seen as difficult and unrewarding cases. Psychiatric services are increasingly reserved for those with serious mental illness, a term not taken to include most cases of NFSB. The current situation should not be allowed to continue, because NFSB represents a major social and clinical problem. At the least, large-scale intervention studies are required to inform practice and ensure that management of NFSB is less arbitrary in the future.

Improved mental health care, particularly at community level, must be an important part of any strategy to reduce self-harm. Approaches to primary prevention may include increasing peoples' coping skills — possibly offering coping-skill classes at school, and counselling in the community.

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