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Suidical ideation in severe depression

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Abstract Suicidal ideation and communication were investigated for 89 suicide victims with a primary severe depression and matched controls. The selection of patients was based on multiaxial ratings of all hospitalised patients between 1956 and 1969. A blind record evaluation was performed, including scores on Beck's Scale for Suicidal Ideation and additional items apart from that scale. There was no relation between high scores on the Beck's scale and completed suicide. In the male group, suicidal ideation "beyond one's own will" was related to suicide. Female suicides that had made an attempt showed higher suicidal ideation than female suicides who had not. A substantial minority of the women (22 %) committed suicide without showing any previous intent. Only 5 % of the male suicides had shown no previous intent to commit suicide.

Key words Depression · Suicidal ideation · Suicide · Sex differences

Introduction

Suicidal behaviour is common in depressed patients. A recent review has shown that the mortality risk for suicide was 21 times that expected (Harris and Barraclough 1998). Suicide is per definition always preceded by ideation and rather frequently by attempt. The variation of suicide potential from a more innocent to a more dangerous behaviour has been postulated as the suicidal process (Beck et al. 1979, Beskow 1979, Paykel et al. 1974). Still the need to study these different types of suicidal behaviour separately is often stressed (Maris 1981).

Suicidal ideation has been shown to be related to attempt (Bulik et al. 1990, Howard-Pitney et al. 1992, Miller et al. 1986, Reynolds 1991, Roy-Byrne et al. 1988, Szanto et al. 1996) or multiple attempts (Rudd et al. 1996). It could, however, not be related to the lethality of attempt (Roy-Byrne et al. 1988) or accomplished suicide (Beck et al. 1985). Still, it was related to suicide within 2–10 years after examination according to another study (Fawcett 1993). The risk of an attempt has been shown to be higher among ideators with than without a plan, but more of the unplanned attempts occur within one year after onset of ideation (Kessler et al. 1999). Some investigators have found a higher frequency of ideation in females than in males (Garrison et al. 1991, Rich 1992, Rosenstock 1985) but others (Reynolds 1991, Rudd 1990, Schweitzer et al. 1995) did not find any gender difference. In examining the relationship between depression, hopelessness, and suicidal ideation, Beck et al. (1979) distinguished between "active suicidal desire", "passive suicidal desire", and "specific plans for suicide".

Factor-analytic studies have given different components like "thoughts and plans", "anticipated response of others", and "telling others of intent" (Reynolds 1991). Other investigators have found factors like "suicide desire", "preparation for suicide or attempt", and "perceived capability of making an attempt" (Clum and Bin Yang 1995).

At the Department of Psychiatry in Lund all patients admitted between 1956 and 1969 were rated on a multiaxial schedule including ratings of severe depression/melancholia. This database enabled the selection of severely depressed suicides and matched controls for a series of studies on suicide in severe depression based on a blindly performed retrospective record evaluation.

The aim of the present investigation was to evaluate suicidal ideation in a sample of severely depressed suicides and matched controls in a long-term perspective. The following questions were addressed: Is suicidal ideation re-

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lated to suicide attempt or accomplished suicide? Is any specific type of suicidal ideation related to suicide? Is there any difference between men and women?

Material and methods

Sample

In the 1950s and 1960s all patients at the Department of Psychiatry in Lund were rated at discharge on a multiaxial diagnostic schedule (Essen-Möller and Wohlfart 1947). The total number of raters were 30 during the time period (Berglund 1988). Between 1956 and 1969 a total of 1206 patients received the diagnosis severe depression/melancholia. When followed up to 1 Jan 1984, a total of 103 patients had died by their own hand. For those we thus had prospective data from the multiaxial schedule. The case records were performed for a blind retrospective evaluation of the suicides and matched controls from the total sample (Brådvik and Berglund 1993). In a first session one rater (MB) excluded those who had a secondary depression according to RDC–9 (Spitzer et al. 1978). Thus we received 90 suicides, one of whom was excluded because the other rater knew of her. Matched controls for the remaining 89 patients, 38 men and 51 women, were selected according to diagnosis, sex, age and index admission year. They were followed until the death of their suicidal "twin" and chosen still to be alive at that time. In a retrospective diagnostic procedure according to DSM IV (American Psychiatric Association 1994) 91 % turned out to meet the criteria for a major depressive disorder with melancholic or psychotic features (Brådvik and Berglund 2000 a). The actual number was probably higher as symptoms may be underreported. A diagnosis of psychotic features did not discriminate between suicides and controls. In 35 patients, 16 suicides and 19 controls, at least one episode of elevated mood was described, indicating bipolarity. The diagnostic categories showed similar distributions for age and sex.

Record evaluation

In a second session the other rater (LB) performed a blind record evaluation of the records on a series of variables, among others suicidal ideation. The records were carefully written and very informative. Altogether 1110 reports on suicidal ideation were found. Those were spread over 726 depressive episodes. Thus on the average there was at least one report of suicidal ideation during every depressive episode. Length of follow-up was the same for suicides and controls (Brådvik and Berglund 2000 a). Suicides and controls showed similar rates of inpatient and outpatient admissions.

Beck's scale of suicidal ideation (SSI)

The SSI (1979) was used when applicable (Table 1). Three items were frequently scored, as patients were actually asked namely 1. life-weariness, 2. wish to die, and 4. contemplation of suicide (often including 12. suicidal plans). Others were sparse in number and should be considered as spontaneous reports.

Additional scoring

There were 87/733 (12 %) of the positive reports on suicidal ideation that could not be scored on the SSI. Separate categories were created not to exclude any information on suicidal thoughts. The following items were evaluated apart from the SSI:

- Suicidal ideation "beyond one's own will". Fear of killing oneself, feels forced to kill oneself, nightmares on suicide. Patients sometimes talk about a fear of killing oneself without really wanting to.
- Extended suicide contemplated. Thoughts of killing somebody else before taking one's own life (in females usually their child).
- Not worthy of living. Self-neglect has been related to suicide (Baraclough 1975). Is a sense of not being worthy of living related to suicide?
- Ought to be dead ("they would be better off without me"). This item was found in another scale of suicidal ideation, ASIQ, item 12 and 17 (Reynolds 1991), published after the scoring in this study.
- Wish to be killed by somebody else. A few patients talked about wanting to be killed by somebody else.
- Imperative hallucinations. Some psychotic patients had hallucinations about committing suicide.
- Chronic suicidal ideation (lasting for years). This item was included, as item 6 on the SSI does not make clear if ideation was present for years or was continuous during the present depressive episode.

The above mentioned items were only scored as existent or not. None of these items were asked by the doctor and thus could always be considered as spontaneous reports.

In addition suicide attempt has been evaluated on a four degree scale for estimation of maximum life-time suicidal behaviour ac-

Table 1 Suicidal ideation in the long-term course of depression SSI

		MALES		FEMALES	
		Suicides n=38	Controls n=38	Suicides n=51	Controls n=51
1.1–2	Life-weariness	25	24	33	27
2.1–2	Wish to die	15	11	18	17
3.1–2	Reasons for dying outweighing living	1	1	0	0
4.1–2	Desire to make active suicide attempt	24	24	31	25
5.1–2	Passive suicidal desire	0	1	0	2
6.1–2	Time dimension: duration of ideation	7	4	5	1
7.1–2	Time dimension: frequency of ideation	1	0	1	0
8.1–2	Attitude: accepting	0	0	2	0
9.1–2	Unsure/no sense of control	2	0	3	2
10.1–2	Deterrents to active some/no concern	1	0	1	0
11.1–2	Reason: to escape	0	0	0	0
12.1–2	Method considered not in detail /well formulated	11	8	13	14
13.1–2	Method readily available	1	0	0	0
14.1–2	Unsure of courage to carry out	0	2	0	0
15.1–2	Expectancy to carry out	0	0	0	0
16.1–2	Partial/complete preparation	2	0	2	2
17.1–2	Suicide notes completed	3	0	3	0
18.1–2	Final acts in anticipation of death	3	0	2	0
19.1–2	Not revealed ideas openly	1	0	0	0
Mean		2.5	2.0	2.1	1.8
SD		1.3	1.3	1.5	1.5
Median		2	2	2	2

cording to another study of the same sample (Brådvik and Berglund 2000b). Suicidal gestures, ambivalent attempt, definite attempt and severe attempt were scored. Ambivalent attempts have been described as aborted attempts in the literature (Marzuk 1997).

Analysis

Comparisons between suicides and controls were made during the whole observation period.

- First, the total number of items in the long-term course was scored. (All positive reports on the Beck's SSI were added and the number of items in suicides and controls were compared. Then the additional items that did not fit in the SSI were compared.)
- Second, the nature of suicidal ideation was analysed. The different items like life-weariness, suicidal plans etc. were compared separately.
- Third, the most severe suicidal ideation during the observation period was scored. This was based on a suicidal scale from life-weariness to suicidal plans. Had the suicides reported more often suicidal plans as their most severe ideation, etc.? In addition the most severe suicidal behaviour, including suicide attempt, was scored.
- Finally, suicidal ideation was related to suicide attempt.

Statistics

Wilcoxon's test was used for comparisons between matched pairs, McNemar's test for comparisons between matched groups. Chi-square and Mann-Whitney's tests were used for comparisons with other groups.

Results

Ratings of suicidal ideation

Specific items on the SSI

Suicidal ideation in the long-term course according to Beck's SSI is presented in Table 1. The total number of items on Beck's SSI did not discriminate between suicides and controls for neither sex. Life-weariness, wish to die, desire to make active suicide attempt, and suicidal plans (items 1, 2, 4, and 12 on SSI) could not be shown to be associated with suicide. Differences were found among the last items, where suicides had higher scores. Suicide notes (item 17.2 on SSI) were only written by suicides (6 versus 0, chi-square = 4.17, $p < .05$), as were acts in anticipation of death only performed by suicides (5 versus 0).

Denial of ideation is not presented in the table (1.0, 2.0, 3.0 etc.), but some similarities and differences are of interest. It is noteworthy that deterrents to active attempt, like family and religion (10 on SSI), were about equally common in suicides and controls (17/14). "Attempt made in order to manipulate" (11.0 on SSI) was also evenly distributed among suicides and controls (5/3). "No courage to carry out" was about evenly distributed in the female group but only found in suicides in the male group (5/0).

"Passive suicidal desire" including "wish to be killed" among the additional items was actually more common in controls (0/5).

Specific items apart from Beck's SSI

Items scored in this study apart from the SSI are presented in Table 2. Male suicides had more reports on suicidal ideation "beyond one's own will" than controls (Table 2, McNemar 11/2, chi-square = 6.23, $p < .025$). Female suicides more frequently tended to propose that they were unworthy of living than controls (McNemar 7/1, chi-square = 3.13, $p < .10$). This item did not occur in the male group (male versus female suicides 0/38 vs 7/51, chi-square = 3.93, $p < .05$). Those items were independent of number of episodes.

The most severe suicidal behaviour

The most severe suicidal ideations prevalent during the lifetime, according to the records, are presented in Table 3 and the most severe suicidal behaviours in Table 4. (Suicidal ideation "beyond one's own will" was included in contemplation of suicide or suicidal plans when a method was mentioned. Two male suicides reported "final arrangements in anticipation of death" apart from "wish to die".) Suicides and controls showed similar rates of suicidal ideation of different severity (Table 3). Suicide attempt was

Table 2 Suicidal ideation not included in SSI

	MEN		WOMEN	
	Suicides n=38	Controls n=38	Suicides n=51	Controls n=51
1. "I'm not worthy of living"	0	0	7	1
2. "Children/others would be better off without me"	0	0	1	3
3. Extended suicide contemplated	4	0	3	2
4. Imperative hallucinations	0	1	0	2
5. Chronic ideation (over years)	2	1	5	1
6. Suicidal ideation "beyond one's own will"	11	2	11	10
7. Wish to be killed	0	1	0	2

Table 3 Most severe suicidal ideation, lifetime incidence. Suicide attempt as well within brackets

	MEN		WOMEN	
	Suicides n=38	Controls n=38	Suicides n=51	Controls n=51
No suicidal ideation	1(1)	4(2)	8(3)	12(3)
Life-weariness	3(2)	4(2)	5(1)	8(2)
Death wish	4(3)	3(0)	4(2)	3(1)
Suicidal contemplation	19(11)	19(7)	21(15)	14(3)
Suicidal plan	11(6)	8(6)	13(10)	14(7)

Table 4 Most severe lifetime incidence of suicidal behaviour

	MEN		WOMEN	
	Suicides (n=38)	Controls (n=38)	Suicides (n=51)	Controls (n=51)
No suicidal behaviour	0	2	5	9
Life-weariness	1	2	4	6
Wish to die	1	3	2	2
Suicidal contemplation	8	12	6	11
Suicidal plan	5	2	3	7
Suicidal gesture	3	3	2	1
Suicidal attempt, ambivalent	4	3	5	5
Suicidal attempt, definite	10	8	12	4
Serious attempt	6	3	12	6

more frequent in female suicides as compared to controls ($z = 2.63$, $p < .01$) On the other hand a substantial minority of female suicides neither made an attempt nor communicated that they had contemplated suicide (11/51, 22 %). In the male suicide group only two of the patients had neither made an attempt nor told that they had considered suicide (female suicides versus male suicides 11/51 versus 2/38, chi-square 4.64, $p < .05$).

Suicidal ideation versus suicide attempt

High scores on suicidal ideation according to SSI (above median = 2) were related to suicide attempt in female suicides (17/31 versus 4/20, chi-square = 6.09, $p < .025$). This relationship was not found in female controls nor any of the male groups.

However, among male suicides who sometimes made a suicide attempt, repeaters much more often had scores above the median as compared to those who made a single attempt (7/7 versus 4/16, chi-square = 8.18, $p < .01$). Attempts were preceded by ideation about as frequently in suicides as in controls (78 % versus 71 % in males and 58 % versus 56 % in females).

Diagnostic categories and ideation

Suicidal ideation "beyond one's own will" was related to psychosis in male suicides (10/23 versus 1/15, chi-square = 5.98, $p < .025$) but not in any other subgroup. Thus it was related to suicide among male patients with psychotic features (10/23 vs 1/21, chi-square = 8.78, $p < .005$). Suicidal ideation "beyond one's own will" was also related to bipolarity in both suicide groups (5/6 versus 6/32, chi-square = 7.35, $p < .01$ in the male group and 5/10 versus 6/41, chi-square = 5.94, $p < .025$ in the female suicide group). No such relation was found in controls. Being "unworthy of living" was related to bipolarity in female suicides (4/10 versus 3/41, chi-square = 4.67, $p < .05$). The only female control that also reported this item was bipolar.

Patients with and without psychotic features showed similar rates of items on the SSI. And the scale did not discriminate between suicides and controls without psychotic features.

Discussion

The present study deals with a sample of severely depressed patients. The multiaxial schedule enabled the selection of well-matched controls. The agreement with DSM IV turned out to be high with at least 91 % of the patients fulfilling the criteria for major depressive disorder with melancholic or psychotic features. The records were well written and very informative, and a great number of statements on suicidal ideation were available. An important weakness of this study is the lack of systematic inquiry of suicidal ideation. Reliability would of course have been higher if patients had been administered questionnaires. The main items that were frequently asked were life-weariness, desire to die, and contemplation of suicide. Other items should be considered as spontaneous reports and represent suicidal communication rather than ideation. Suicidal communication probably reflects ideation. In making a comparison between suicides and controls one assumes that suicides and controls are equally prone to communicate their suicidal ideation. This might be questioned. Still, an investigation of suicidal communication has a value per se. Moreover, we have been able to register items that are not included on the main schedules. This could be seen as an advantage. Further suicidal ideation has been continuously scored over a long period of time. Repeated administrations of questionnaires have shown that about 40 % of the subjects may deny previous ideation, though it has actually been scored (Goldney et al. 1991).

Main findings

Beck's SSI could not be shown to be related to suicide. A most severe ideation of life-weariness, wish to die, contemplation of suicide and suicidal plans during life-time were unrelated. It appears that the difference is found late in the process (acts in anticipation of death and suicide notes), where suicide has become a reality to the patient. The most severe suicidal ideation during lifetime (Table 3) could also be compared to other investigations on psychiatric patients (Zisook et al. 1994) or a general population (Paykel et al. 1974, Crosby et al. 1999, Kessler et al. 1999). Most severe suicidal ideation does not show the decrease in frequencies that has previously been found. Instead contemplation of suicide and attempt are rather frequent. The previous finding has been an argument for a suicidal process developing from life-weariness to suicidal plans and suicide attempt. It could be noted that a few patients in the present sample reported a wish to die or contemplation of suicide and denied life-weariness at the same time. ("I wish I were dead, but I am not weary of life".)

On the other hand suicidal ideation "beyond one's own will" was related to suicide among male suicides showing psychotic features. This is compatible with the lack of re-

lationship with more rational considerations scored on the SSI like wish to die, suicidal plans etc. This item is suggestive of a more delusional component and needs further exploration.

"Unworthy of living" only tended to be related, a finding which is not conclusive as there are so many statistical comparisons. However, other investigators have found a relationship between a similar concept, low self-esteem, and suicidal ideation in the females (Olsson and von Knorring 1997). Therefore this item should perhaps be included in future investigations.

All in all these results are not applicable in the clinical situation but they are suggestions for further research. The considerations preceding suicide appear less rational than postulated when the SSI was created, and new instruments ought to be developed as a complement to the traditional scale in order to evaluate the suicide risk in severely depressed patients.

Suicidal ideation was related to suicide attempt in female suicides. Some female suicides communicated ideation and made attempts, while others showed nearly no suicidal behaviour before suicide. Thus, the most severe suicidal behaviour was low in a substantial minority of the female suicides (22 %), while the corresponding number in the male group was only 5 %. This is remarkable as it has been shown that men more often than women have a fear of social disapproval over suicidal thoughts (Rich 1992).

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References

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (4th edn) (DSM IV): Washington, DC: APA, 1994

Barraclough BM, Pallis DJ (1975) Depression followed by suicide: a comparison of depressed suicides with living depressives. Psychol Med 5:55–61

Beck AT, Kovacs M, Weissman A (1979) Assessment of suicidal intention: The Scale for Suicide Ideation. J Consult Clin Psychology 47:343–352

Beck AT, Steer RA, Kovacs M, Garrison B (1985) Hopelessness and eventual suicide: a 10-year prospective study of patients hospitalised with suicidal ideation. Am J Psychiatry 142:559–563

Berglund M, Nilsson K (1987) Mortality in severe depression. A prospective study including 103 suicides. Acta Psychiatr Scand 76:372–380

Berglund M (1988) Alcoholics committed to treatment: a prospective study of behavioural characteristics, mortality, and social adjustment. Alcohol Clin Exp Res 11:19–24

Brådvik L, Berglund M (1993) Risk factors for suicide in melancholia. A case record evaluation of 89 suicides and their controls. Acta Psychiatr Scand 87:306–311

Brådvik L, Berglund M. (2000a) Treatment and suicide in severe depression. A case-control study on antidepressant therapy at last contact before suicide. Accepted for publication in J ECT

Brådvik L, Berglund M. (2000b). Aspects on the suicidal career in severe depression. A comparison between attempts in suicides and controls. Submitted manuscript

Bulik CM, Carpenter LL, Kupfer DJ, Frank E (1990) Features associated with suicide attempts in recurrent major depression. J Affect Dis 18:29–37

Clum GA, Bin Yang (1995) Additional support for the reliability and validity of the modified scale for suicidal ideation. Psychol Assessment 7:122–125

Crosby AE, Mark P, Cheltenham MP, Sacks JJ (1999) Incidence of suicidal ideation and behavior in the United States, 1994. Suicide and Life-Threatening Behavior 29:131–140

Essen-Möller E, Wohlfart S (1947) Suggestions for the amendment of the official Swedish classification of mental disorder. Acta Psychiatr Neurol Scand 22: Suppl 47:551–555

Fawcett J (1993) The morbidity and mortality of clinical depression. Int Clin Psychopharmacol 8:217–220

Garrison CZ, Addy CL, Jackson KL, McKeown RE, Waller JL (1991) A longitudinal study of suicidal ideation in adolescents. J Am Acad Child Adolesc Psychiatry 30:597–603

Goldney RD, Smith S, Winefield AH, Tiggeman M, Winefield HR (1991) Suicidal ideation: its enduring nature and associated morbidity. Acta Psychiatr Scand 83:115–120

Harris EC, Barraclough B (1998) Excess mortality of mental disorder. Br J Psychiatry 173:11–53

Howard-Pitney B, LaFromboise TD, Basil M, September B, Johnsson M (1992) Psychological and social indicators of suicide ideation and suicide attempts in Zuni adolescents. J Consult Clin Psychology 60:473–476

Kessler RC, Borges G, Walters EE (1999) Prevalence of and risk factors for lifetime suicide attempts in the national comorbidity survey. Arch Gen Psychiatry 56:617–626

Maris RAW (1981) Pathways to Suicide. The John Hopkins University Press, Baltimore

Marzuk PM, Tardiff K, Leon AC, Portera L, Weiner C (1997) The prevalence of aborted suicide attempts among psychiatric in-patients. Acta Psychiatr Scand 96:492–496

Miller IW, Norman WH, Bishop SB, Dow MG (1986) The modified scale for suicidal ideation: reliability and validity. J Consult Clin Psychology 54:724–725

Olsson G, von Knorring A-L (1997) Beck's Depression Inventory as a screening instrument for adolescent depression in Sweden: gender differences. Acta Psychiatr Scand 95:277–282

Paykel ES, Myers JK, Lindenthal JJ, Tanner J (1974) Suicidal feelings in the general population: a prevalence study. Brit J Psychiatry 124:460–69

Reynolds WM (1991) Psychometric characteristics of the adult suicidal ideation questionnaire in college students. J Personality Assessment 56:289–307

Rich AR, Kirkpatrick-Smith J, Bonner RL, Jans K (1992) Gender differences in the psychosocial correlates of suicidal ideation among adolescents. Suicide Life-Threat Behav 22:364–373

Rosenstock HA (1985) Depression, suicidal ideation and suicide attempts in 900 adolescents: an analysis. Crisis 6/2:89–105

Roy-Byrne PP, Post RM, Hambrick DD, Leverich GS, Rosoff AS (1988) Suicide and course of illness in major depressive disorder. J Affect Dis 15:1–8

Rudd MD (1990) An integrative model of suicidal ideation. Suicide Life-Threat Behav 20:16–30

Rudd MD, Joiner T, Rajab MH (1996) Relationships among suicide ideators, attempters, and multiple attempters in a young-adult sample. J Abnorm Psychology 105:541–550

Schweitzer R, Klayich M, McLean J (1995) Suicidal ideation and behaviours among university students in Australia. Austr New Zeal J Psychiatry 29:473–479

Spitzer RL, Endicott J, Robins E (1978) Research diagnostic criteria. Rationale and reliability. Arch Gen Psychiatry 35:773–782

Szanto K, Reynolds III CF, Frank E, Stack J, Fasiczka AL, Miller M, Mulsant BH, Mazumdar S, Kupfer DJ (1996) Suicide in elderly depressed patients. Is active vs. passive suicidal ideation a clinically valid distinction? Am J Geriatr Psychiatry 4: 197–207

Zisook S, Goff A, Sledge P, Shuchter SR (1994) Reported suicidal behaviour and current suicidal ideation in a psychiatric outpatient clinic. Ann Clin Psychiatry 6:27–31