

# Aspects of the Suicidal Career in Severe Depression: A Comparison Between Attempts in Suicides and Controls

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*Suicide attempts in the long term course of illness were investigated in 89 suicides with a primary severe depression/melancholia and in matched controls. Multiaxial ratings at index admission between 1956 and 1969 enabled the selection of patients. These patients were tracked to January 1, 1984. A blind record evaluation was performed. Suicide attempts were more common among suicides than controls. General characteristics of attempts, such as severity, the use of a violent method, and repetition did not differentiate suicides from controls. Rather, there were differences in the pattern of suicide attempts. In suicides, only, re-attempts were related to number of episodes of mood disorder. Controls more often made re-attempts after a stressful life event. Serious attempts occurred early in the course of suicide attempts in female suicides, in contrast to controls. There was a correlation between the occurrence of a suicide attempt and completed suicide among male unipolar patients and female bipolar patients.*

**Keywords** depression, suicide, attempted suicide, longitudinal study, life event

A mood disorder is a risk factor for suicide. In such disorders, a suicide attempt is the best known predictor of suicide (Goldstein, Black, Nasrallah & Winokur, 1991; Sainsbury, 1986). Therefore, attempted suicide in depressive

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disorders is an important topic of clinical research. There now follows a brief outline of the scope and broad conclusions of existing research.

Investigations into the relationship between the severity and repetition of suicide attempts and subsequent suicides have given contradictory results. Serious suicide attempts resemble completed suicide and have therefore been a subject of special interest. The medical severity of an attempt has been related to later suicide (Rosen, 1976; Suokas & Lönnqvist, 1991), as well as an intention to die (Suokas & Lönnqvist, 1991). However, other investigators have not established any significant correlation between severity and accomplished suicide (Nielsen, Wang & Bille-Brahe, 1990). Conclusions are also contradictory in the case of repeated suicide attempts, with some investigators reporting a correlation to suicide (Goldstein, Black, Nasrallah & Winokur, 1991; Suokas & Lönnqvist, 1991), but others finding none (Nielsen et al., 1990).

By comparing the severity of the suicide attempt, and its repetition, several investigators have found that a serious attempt is related to the number of previous attempts, and/or that it occurs late in the suicidal career in depressed patients (Duggan, Sham, Lee & Murray, 1991; Malone, Hass, Sweeney & Mann, 1995; Roy-Byrne, Post, Hambrick, Leverich and Rosoff, 1988), and in patients with mixed diagnoses (Soloff et al., 1994). Another investigator found a correspondence between severity and time elapsed since the previous attempt (Motto, 1965); again indicating that severe suicide attempts occur late in the suicidal career. None of those studies, however, related the course of suicidal behavior to future suicide.

By contrast, a correlation has been demonstrated between the use of a violent method in carrying out a suicide attempt and later suicide (Hawton, 1992). However, in a more recent study (Nordström,

et al., 1994) the use of a violent method was suggested rather to be a short-term predictor.

Suicidal behavior is often precipitated by stressful life-events. Subjects who have *not* experienced severe events before a suicide attempt have shown high "hostility scores" indicating intro-punitiveness (Farmer & Creed, 1989). This in turn has been related to suicide intent (Farmer & Creed, 1986). It has therefore been proposed that patients making suicide attempts not following adverse life events would be more prone to suicide (Farmer & Creed, 1989). However, no direct comparison between suicide attempts with or without preceding life events has been made.

Life stressors were also found more often in suicides than controls in one study (Hagnell & Rorsman, 1980) and another demonstrated such factors in 97% of suicide victims (Rich, Warsrad, Nemiroff, Fowler, & Young, 1991). However, there has been shown to be a difference here between patients with a diagnosis of depression and alcoholism. According to three investigations, personal object loss shortly before suicide was more common in alcoholics than depressives (Berglund, Krantz, Lundqvist & Therup, 1987; Murphy & Robins, 1967; Rich, Fowler, Fogarty & Young, 1988).

With reference to diagnostic subgroups: we do not know of any difference in rates of suicide attempt before suicide when comparing bipolars and unipolars. In the absence of the completed suicide factor, similar rates of suicide attempts in the two subgroups are demonstrated in one meta-analytic study (Jamison, 1990) but not according to another review article (Lester, 1993). The latter showed a higher rate of suicide attempts in bipolar than in unipolar patients in most but not all studies.

Though a suicide attempt is related to suicide, most suicide attempters never commit suicide. The aim of the present study was therefore to find out whether, in a

longitudinal perspective, characteristics of attempts and circumstances surrounding them would differentiate between suicides and controls in a sample of severely depressed patients. Are repeated and/or severe attempts associated with suicide? Is it possible to correlate a violent suicide attempt method? Does the presence or absence of life events before an attempt affect the predictive value? Finally, does the course of suicidal behavior give any clue about the suicidal outcome?

## MATERIALS AND METHODS

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### Sample

In the 1950s and 1960s, all in-patients at the Department of Psychiatry of the University Hospital, Lund, were rated on a multi-axial diagnostic schedule at discharge (Essen-Möller & Wohlfart, 1947). This database enabled the selection, for an investigation into suicidal behavior, of patients with a severe depression/melancholia at an index admission between 1956 and 1969. (This item was used from 1956 onwards). Investigations continuing up to January 1, 1984 revealed that a total of 103 out of 1,206 severely depressed patients had died by their own hand. The case records were prepared for a thorough blind retrospective evaluation of suicides and matched controls from the total sample, of which a detailed description has previously been given (Brådvik & Berglund, 1993). In a first session, secondary depressions were excluded (by MB) according to RDC-9 (Spitzer et al., 1978). We thus received 89 suicides (38 men and 51 women), and 89 controls with a primary severe depression. Matching criteria were diagnosis, sex, age, and index admission year (first admission with the diagnosis). The controls were followed until the death of the suicides they matched and, at that point, all were alive.

From symptoms described in the records, a retrospective diagnostics according to the DSM-IV (American Psychiatric Association, 1994) was performed. It revealed that, on a long-term scale, 91% of the patients met the criteria for major depressive disorders with melancholic or psychotic features (80/89 suicides and 82/89 controls). Even though the case records were carefully written and highly informative, individual symptoms could have been under-reported. The actual number may therefore be higher. In 35 patients (16 suicides and 19 controls), an episode of elevated mood was documented at some time during the course, indicating bipolarity (generally bipolar II). Bipolarity and psychosis showed a similar distribution for age and sex in suicides and controls.

### Record Evaluation

In a second session, one of the analysts (LB) performed a blind evaluation on a series of variables, including suicide attempts and distressing life events preceding the attempts.

In a third session, as new questions arose during the analyses of data, additional items such as the onset of the first depressive episode (when other than index admission) were scored. These items were not blindly rated, but we consider this deficiency to have had little or no impact on the results.

*Long Term Course of Major Depression.* The onset of the first depressive episode was noted, as was recurrence according to DSM-IV (American Psychiatric Association, 1994). If a patient had received anti-depressant therapy prior to the first admission, this occasion was considered the first episode. In a few cases, the first episode was considered to be a history of depressed mood with at least one more depressive symptom. (Estimation of

intervals between episodes was based on blind ratings of improvement/exacerbation.)

*Suicide Attempt.* Suicide attempts were scored on a four-degree scale based on the descriptions by Motto (1965) and Weisman & Worden (1972), with a few modifications.

1. *Suicidal gestures.* An act of self-harm with little or no physical injury where the intent to die is not clearly stated.
2. *Ambivalent suicide attempt.* A patient initiates a suicidal act, which is potentially fatal, but interrupts this action and thus does not cause much self-damage.
3. *Definite suicide attempt.* A life-threatening behavior with a moderately high risk of death and low chance of rescue.
4. *Severe suicide attempt.* Highly lethal suicide attempts, that is requiring intensive care. Precautions against discovery and strong regret at failure to die are considered psychologically severe.

“Ambivalent suicide attempts” would receive low risk scores and high rescue scores on Weisman’s schedule. Still, there may initially be a strong intent to die, since these patients usually seek solitude to initiate the act. Such suicide attempts constituted a fairly high proportion of the suicidal acts in the study sample, 51/196 (26%). This category of suicidal behavior resembles what have recently been described in literature as “aborted attempts” (Marzuk, Tardiff, Leon, Portera & Weiner, 1997) in which the essential characteristics are 1) intent to kill oneself, 2) a change of mind before making an actual suicide attempt and 3) the absence of physical injury. They have been shown to correlate to actual suicide attempts (Barber, Marzuk, Leon & Portera, 1998).

The suicide attempts were further subdivided according to method. Drug overdoses and superficial wrist-cuts were classified as “non-violent”, and all others

were considered “violent” (Träskman-Bendz et al., 1981). In a few cases the method was not mentioned in the records.

*Life Events.* Life events occurring up to one year before the suicide attempt were rated on the basis of Paykel’s schedule (Paykel, Prusoff & Uhlenhuth, 1971). As in our previous study (Brådvik & Berglund, 1993), we subdivided the events into 3 categories:

- 1) Severely distressing events (item 1–14; mostly “personal object loss”).
- 2) Moderately severe events (item 15–49).
- 3) Mainly positive events (item 50–61).

Where information was not available, namely in those suicide attempts that had occurred before contact with the clinics—for instance where admission was to another hospital or where there was no contact with medical care—the item was classified “unknown”.

*Statistics.* MacNemar or chi-square tests were used and, where applicable, Fisher’s exact test. The Mann-Whitney U-test was used for comparison of ranks within groups.

## RESULTS

Results of the study are presented according to the particular factor being compared, namely, the occurrence of a suicide attempt, the nature (bipolar or unipolar) of mood disorder, the course of the depressive condition, the influence of life events, and finally various aspects of the suicidal career.

### Suicide Attempt

The characteristics of suicide attempts and preceding life events in suicides and controls are presented in Table 1. (The most severe attempt is noted.)

TABLE 1. Characteristics of Attempts in Suicides and Controls (percentage)

	Suicides (n = 89)		Controls (n = 89)	
	One attempt 30*	Repeated attempt 24	One attempt 19	Repeated attempt 14
>3 attempts		7(29)		4(29)
Suicidal gesture	5(17)	0(0)	3(16)	1(7)
Ambivalent attempt	6(20)	3(13)	5(26)	3(21)
Definite attempt	11(37)	11(46)	7(37)	5(36)
Severe attempt	8(27)	10(42)	4(21)	5(36)
Non-viol method	18(60)	11(46)	12(63)	4(29)
Violent method	12(40)	13(54)	7(37)	10(71)
Life-event				
Sometimes absent	14(47)	20(83)	5(26)	8(57)
Always present	15(50)	2(8)	12(63)	3(21)
Unknown	1(2)	2(8)	3(16)	3(21)

Suicide attempt suicides versus controls: 54/33 (MacNemar 32/11)  $p < .005$ .

As expected, suicide attempts were more frequent in suicides than in controls. A comparison between the two groups in actual suicide attempts (definite or severe) showed a corresponding difference, 45% in suicides versus 24% in controls, (MacNemar 28/9, chi-square = 9.76,  $p < .005$ ).

However, no further contrasts in the characteristics of attempts were demonstrated. Statistics describing degree of severity in suicide attempts were similar in suicides and controls. The likelihood of repetition after a first attempt was approxi-

mately equal in suicides and controls (44% versus 42%). In both groups, 29% of those who had made three suicide attempts went on to make a fourth.

Attempts using a violent method occurred in suicides and controls with approximately equal frequency. The corresponding frequencies for actual attempts were 45% versus 48%, for severe attempts 39% versus 33%.

Finally, the absence of life events before suicide attempts showed a non-significant difference between suicides and controls (chi-square = 3.64,  $p < .10$ ).

TABLE 2. Suicide Attempts in Bipolar Versus Unipolar Mood Disorder (percentage)

	Males		Females	
	suicide attempt	No suicide attempt	suicide attempt	No suicide attempt
Bipolars				
Suicides	3(50)	3(50)	9(90)*	1(10)
Controls	6(75)	2(25)	3(27)	8(73)
Unipolars				
Suicides	20(63)*	12(37)	22(54)	19(46)
Controls	11(37)	19(63)	13(33)	27(67)

Suicide attempt suicides versus controls:  
female bipolars Fisher's exact tests  $p = .006$ .  
male unipolars \* $p < .05$ .

### Unipolar/Bipolar Mood Disorders

Suicide attempts were significantly more common among female bipolar patients who later committed suicide than in their controls, whereas in female unipolar patients the difference was not significant (chi-square = 3.69,  $p < .10$ ). In contrast, suicide attempts were significantly more common in male unipolar suicides than in their controls.

#### *Course of Depression and Suicide Attempt.*

Occurrence of attempted suicide was not related to the number of depressive episodes in any of the groups. However, in suicides, re-attempts were related to a higher number of episodes ( $z = 2.73$ ,  $p < .01$ ). This relationship was not found in the control group.

### Life Events and Suicide Attempts

Distressing life events initiated the suicidal career to approximately the same extent in both groups (57% versus 59%). However, cases where *all* repeated attempts were made *without* preceding life events were more common among suicides (14/23 versus 3/13, Fisher's exact test:  $p < .032$ ; one suicide and one control were excluded owing to lack of information).

Suicides also made serious attempts *without* precipitating events more often (11/17 versus 1/9 in the control group, Fisher's exact test:  $p < .012$ , one suicide was excluded owing to lack of information).

The events were more often serious in the *control* group than in the suicide group (17/34–50%, versus 9/43–21%, in suicides).

### Aspects of the Suicidal Process

*Severity of Suicide Attempts and the Suicidal Career.* There was no appreciable difference in the severity of attempts made by

suicides and controls. However, female suicides more often started with a serious attempt than their controls did (9/12 versus 1/6, Fisher's exact test = .032). Most females making severe attempts were repeaters (8/12 suicides and 5/6 controls).

*The Suicidal Career in Women.* For women, two different suicidal careers may be proposed (Figure 1, 2):

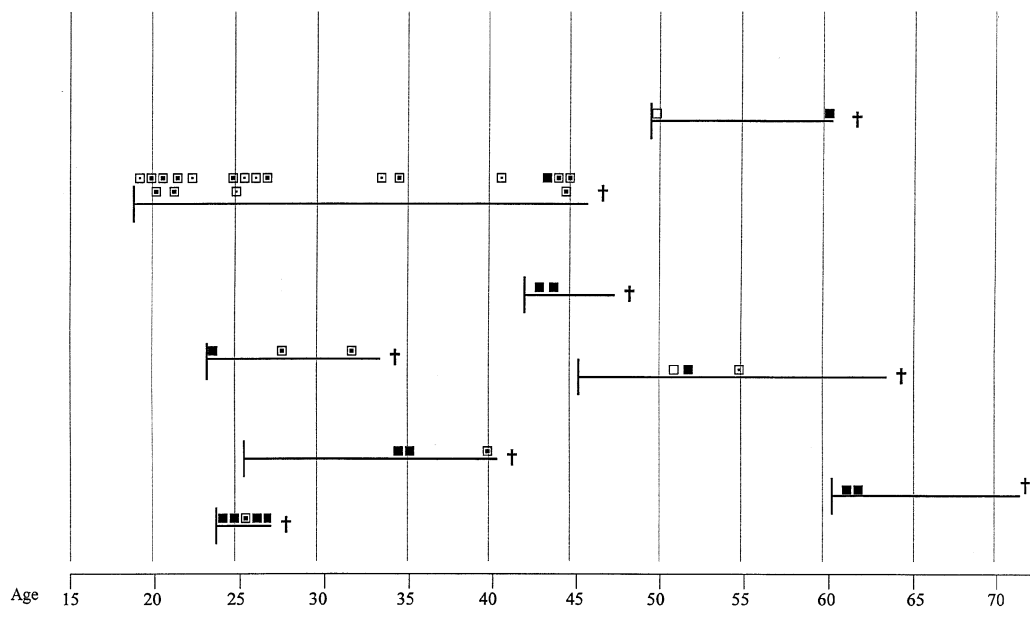
- > Career often starts with a serious suicide attempt and thus shows no increase in the severity of later suicide attempts. Risk of repetition is not related to disturbing life events, but to the number of episodes. This career often ends with suicide.
- > Career has severe suicide attempts late in its course, with re-attempts that are often preceded by distressing life events. This career often has a good prognosis.

*The Suicidal Career in Men.* No significant correlation between repetition of suicide attempts and severity could be shown in the male group. Severe attempts were rare in male repeaters (2/7 in suicides versus 0/6 in controls).

## DISCUSSION

### The Sample

The present study deals with a sample of severely depressed suicides and their controls. The controls were well matched, thanks to the multiaxial schedule, which enabled the selection of controls based on a prospective diagnosis of severe depression/melancholia. Correspondence to a retrospective diagnosis according to DSM IV would appear to be high, since at least 91% of the patients fulfilled the criteria for major depressive disorder with melancholic or psychotic features. The homogeneity of



**FIGURE 1.** *The suicidal career in 8 female suicides. Severity of suicide attempt related to age and course of depression. □ = suicidal gesture; ◻ = ambivalent suicide attempt; ◼ = definite attempt; ■ = severe attempt.*

the sample was enhanced by the exclusion of secondary depressions.

The length of follow-up was approximately the same in suicides and controls, as was the number of episodes (Brådvik & Berglund, 2000). In a second follow-up ending January 1, 1998, only one of the controls (a man) appeared to have committed suicide. He had made two suicidal gestures but no other suicide attempt during the time of the present study. His case may not compromise our results.

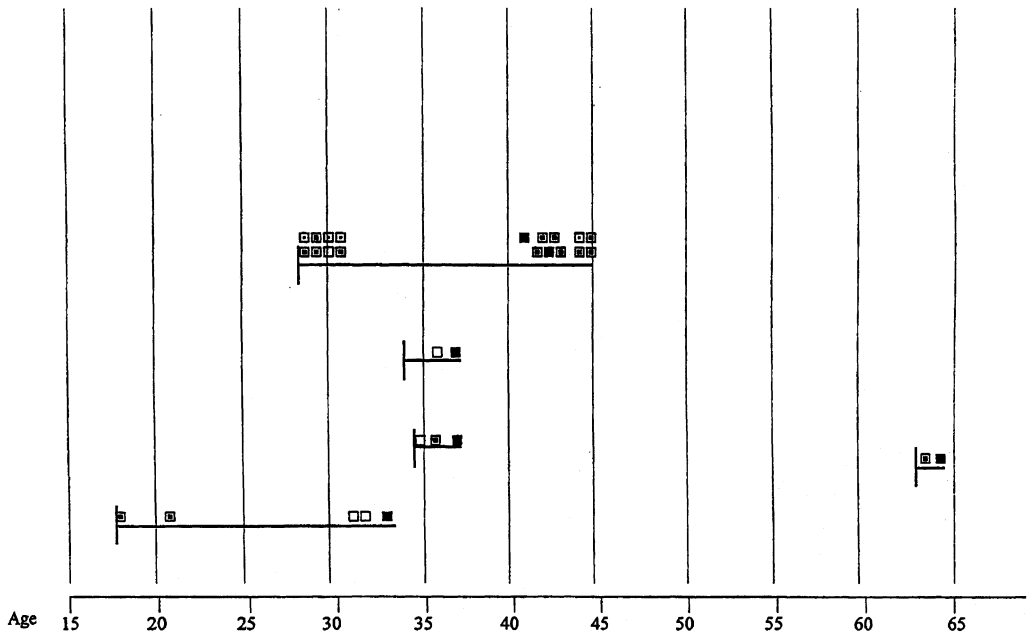
In our study, the frequency of actual suicide attempts (definite or severe) was 45% in suicides. Psychological autopsy studies have shown attempt frequencies of 28–45% (Barraclough 1975; Beskow 1979; Chynoweth, Tonge & Armstrong, 1980). This is in agreement with our study. However, more recent studies on in-patient suicides have shown suicide rates around 70% (Krupinski et al., 1998; Roy-Byrne et al., 1984). This discrepancy may in part be attributable to the selection of in-patient sui-

cides. In general, there is always a risk that some suicidal behavior (especially less severe attempts) is never reported if there is no need for medical intervention. The most important question, however, is whether it is permissible to assume that the proportion of the actual number of suicide attempts reported is similar for suicides and controls. This is probable, but cannot be proven. The likelihood is enhanced by the similar length of follow-up.

The grading of the severity of life events is based on Paykel's schedule (1971) but should be regarded as an approximation, since the distressing influence of an event on a specific individual is difficult to evaluate.

### Main Findings

The first finding was a broad correlation between suicide attempts and suicide in severely depressed patients regardless of such characteristics as repetition, severity, or the use of a violent method. We did not,



**FIGURE 2.** *The suicidal career in 5 female controls. Severity of suicide attempt related to age and course of depression. □ = suicidal gesture ◻ = ambivalent suicide attempt; ◼ = definite attempt; ■ = severe attempt.*

therefore, corroborate the significant link between severity of attempt and future suicide that was found by Rosen (1976) and Suokas and Lönnqvist (1991), but rather confirmed the finding of Nielsen et al. (1990). Similarly, the lack of any association between repetition of attempt and suicide was in agreement with Nielsen et al. (1990) but contradictory to Goldstein, Black, Nasrallah & Winokur (1991) and Suokas and Lönnqvist (1991). Finally, our findings were not inconsistent with recent research showing a violent method of suicide attempt to be a short-term predictor of suicide rather than a potential means of differentiating between suicides and survivors (Nordström et al., 1994).

The second finding was of differences in the course of suicide attempts and depression between suicides and controls. Life events have distinguished suicide attempters from depressed non-attempters in several studies (Duggan et al., 1991; Latha,

Bath & D'Souza, 1994; Paykel, Prusoff & Myers, 1975; Slater & Depue, 1981). According to the present study both suicides and controls may start their suicidal career after a life event, but thereafter suicide victims seem more vulnerable to the course of depression. Controls, on the other hand, seldom continue making attempts, or make severe attempts, unless something disturbing happens, often a more severe event like a personal object loss.

Personal object loss has been shown to be of less importance in completed suicides among depressed patients (Berglund et al., 1987; Murphy & Robins, 1967; Rich et al., 1988). Therefore, the finding that suicide attempts were less frequently preceded by such losses in patients who later committed suicide, was not unexpected.

Several studies have shown that a severe suicide attempt is more likely to occur late in the course of repeated attempts in suicide attempters (Duggan

et al., 1991; Malone et al., 1995; Motto, 1965; Roy-Byrne et al., 1988; Soloff et al., 1994). Those studies did not, however, relate suicide attempts to future suicides. In investigating this relationship, we found such an increase in severity in female controls rather than in female suicides. Most suicide attempters survive and would hence be expected to behave like our controls, and thus our results are not contradictory to previous findings. The fatal suicidal career, however, seems to be different in severely depressed women. An initial severe suicide attempt and an increased risk of reattempt was related to a higher number of episodes of illness rather than life events. These results support the hypothesis of a vulnerability factor contributing to the suicidal outcome, as was postulated by Malone et al. (1995).

A third finding in the present study was that a suicide attempt predicts suicide in bipolar women and unipolar men. Though comparisons of the rates of suicide attempts in bipolars and unipolars have previously been made, yielding different results (Jamison, 1990; Lester, 1993), their relation to future suicide has, to our knowledge, not been investigated.

Finally, it should be kept in mind that this study deals with severely depressed patients, previously categorized as endogenous depressives. Whether our findings are also applicable to a majority of patients with a major depressive disorder, including those without melancholic or psychotic

features, remains a subject for further study. Most studies do not distinguish between patients with a major depressive disorder and the subgroup of depressives with melancholic or psychotic features. Patients with endogenous depressions have been shown to be at high risk of committing suicide (Berglund & Nilsson, 1987; Bucholtz-Hansen, 1993), but perhaps to a lesser extent than other depressives, at least in the short term (Bucholtz-Hansen, Wang, Krag-Sørensen, 1993). If they show a different pattern of suicidal behavior, the differential diagnostics of mood disorders appears to be important.

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#### CONCLUSION

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Although general characteristics of suicide attempts, such as severity, repetition, and violent method, fail to predict suicide, our results show certain differences in the course of suicidal behavior between suicides and controls. Repetition of a suicide attempt seems to be related to the course of depression in suicides, but to life events in controls. Severe attempts occur early in the suicidal career in female suicides, in contrast to controls. Our evidence would, therefore, suggest that, given a thorough investigation of the history of suicide attempts, the chances of predicting and hence preventing suicides might be improved.

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#### REFERENCES

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- American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders, DSM-IV* (4th Ed.). Washington, DC: American Psychiatric Association.
- Berglund, M., Krantz, P., Lundqvist, G. & Therup, L. (1987). Suicide in psychiatric patients. A prospective study of 67 cases without initial signs of severe depression or alcoholism. *Acta Psychiatr Scand.* 76, 431-437.
- Barber, M.E., Marzuk, P.M., Leon, A.C., & Portera, L. (1998). Aborted suicide attempts: a new classification of suicidal behavior. *American Journal of Psychiatry*, 155, 385-389.

- Barracough, B. & Pallis, D. (1975). Depression followed by suicide: a comparison of depressed suicides with living depressives. *Psychol Med*, (5), 55–61.
- Beskow, J. (1979). Suicide and mental disorder in Swedish men. *Acta Psychiatrica Scandinavica*, Suppl. 277.
- Brådvik, L., & Berglund, M. (1993). Risk factors for suicide in melancholia. A case-record evaluation of 89 suicides and their controls. *Acta Psychiatrica Scandinavica*, 87, 306–311.
- Brådvik, L., & Berglund, B. (2000). Treatment and suicide in severe depression. *SECT*, 16, 399–408.
- Buchholtz-Hansen, P.E., Wang, A.G., Kragh-Sorensen, P., & the Danish University Antidepressant Group (1993). Mortality in major affective disorder: relationship to subtype of depression. *Acta Psychiatrica Scandinavica*, 87, 329–335.
- Chynoweth, R., Tonge, J.E., & Armstrong, J. (1980). *Australian and New Zealand Journal of Psychiatry*, 14, 37–45.
- Duggan, C.F., Sham, P., Lee, A.S., & Murray, R.M. (1991). Can future suicidal behaviour in depressed patients be predicted? *Journal of Affective Disorders*, 22, 111–118.
- Essen-Möller, E., & Wohlfart, S. (1947). Suggestions for the amendment of the official Swedish classification of mental disorder. *Acta Psychiatrica Scandinavica*, 22, Suppl. 47, 551–555.
- Farmer, R., & Creed, F. (1986). Hostility and deliberate self-poisoning. *British Journal of Medical Psychology*, 59, 311–316.
- Farmer, R., & Creed, F. (1989). Life events and hostility in self-poisoning. *British Journal of Psychiatry*, 154, 390–395.
- Goldstein, R.B., Black, D.W., Nasrallah, A., & Winokur, G. (1991). The prediction of suicide. Sensitivity, specificity, and predictive value of a multivariate model applied to suicide among 1,906 patients with affective disorders. *Archives of General Psychiatry*, 48, 418–422.
- Hagnell, O., & Rorsman, B. (1980). Suicide in the Lundby study: A Controlled prospective investigation of stressful life events. *Neuropsychobiology*, 6, 319–332.
- Hawton, K. (1992). Suicide and attempted suicide. In E.S. Paykel, *A handbook of affective disorders* (pp. 635–650). Edinburgh: Churchill & Livingstone.
- Jamison, K.R. (1990). Suicide in manic-depressive illness. In F.K. Goodwin & K.R. Jamison (Eds.), *Manic-depressive illness*. (pp. 227–244). London: Oxford University Press.
- Krupinski, M., Fischer, A., Grohmann, R., Engel, R., Hollweg, M., & Möller, H-J. (1998). Risk factors for suicides of inpatients with depressive psychoses. *European Archives of Psychiatry and Clinical Neuroscience*, 248, 141–147.
- Latha, K., Bath, S.M., & D'Souza, P. (1994). Attempted suicide and recent life events: A report from India. *Crisis*, 15, 136.
- Lester, D. (1993). Suicidal behavior in bipolar and unipolar affective disorder: a meta-analysis. *Journal of Affective Disorders*, 27, 117–121.
- Malone, K.M., Haas, G.L., Sweeney, J.A., & Mann, J.J. (1995). Major depression and the risk of attempted suicide. *Journal of Affective Disorders*, 34, 173–185.
- Marzuk, P.M., Tardiff, K., Leon, A.C., Portera, L., & Weiner, C. (1997). The prevalence of aborted suicide attempts among psychiatric in-patients. *Acta Psychiatrica Scandinavica*, 96, 492–496.
- Motto, J.A. (1965). Suicide attempts. A longitudinal view. *Archives of General Psychiatry*, 13, 516–520.
- Murphy, G., & Robins, E. (1967). Social factors in suicide. *Journal of American Medical Association*, 199, 81–86.
- Nielsen, B., Wang, A.G., & Bille-Brahe, U. (1990). Attempted suicide in Denmark. IV. A five-year follow-up. *Acta Psychiatrica Scandinavica*, 81, 250–254.
- Nordström, P., Samuelsson, M., Åsberg, M., Träskman-Bendz, L., Åberg-Wistedt, A., Nordin, C., & Bertilsson, L. (1994). CSF 5-HIAA predicts suicide risk after attempted suicide. *Suicide and Life-threatening Behavior*, 24, 1–9.
- Paykel, E.S., Prusoff, B.A., & Myers, J.K. (1975). Suicide attempt and recent life events. A controlled comparison. *Archives of General Psychiatry*, 32, 327–333.
- Paykel, E.S., Prusoff, B.A., & Uhlenhuth, E.H. (1971). Scaling of life events. *Archives of General Psychiatry*, 25, 340–347.
- Rich, C.L., Fowler, R.C., Fogarty, L.A., & Young, D. (1988). San Diego Suicide Study. III. Relationships between diagnosis and stressors. *Archives of General Psychiatry*, 45, 589–592.
- Rich, C.L., Warsrad, G.M., Nemiroff, R.A., Fowler, R.C., & Young, D. (1991). Suicide, stressors and the life cycle. *American Journal of Psychiatry*, 148, 524–527.
- Rosen, D. (1976). The serious suicide attempt. Five-year follow-up study of 886 patients. *Journal of American Medical Association*, 235, 2105–2109.
- Roy-Byrne, P.P., Post, R.M., Hambrick, D.D., Leverich, G.S., & Rosoff, A.S. (1988) Suicide and the course of illness in major affective disorder. *Journal of Affective Disorders*, 15, 1–8.
- Sainsbury, P. (1986). Depression, suicide and suicide prevention. In A. Roy (Ed.), *Suicide* (pp. 73–88). Baltimore: Williams & Wilkins.
- Slater, J., & Depue, R. (1981). The contribution of environment events and social support to serious suicide attempts in primary depressive disorder. *Journal of Abnormal Psychology*, 90, 275–285.

- Soloff, P.H., Lis, J.A., Kelly, T., Cornelius, J., & Ulrich, R. (1994). Risk factors for suicidal behaviour in borderline personality disorder. *American Journal of Psychiatry*, *151*, 1316–1323.
- Spitzer, R., Endicott, J., & Robins, E. (1978). Research diagnostic criteria. *Archives of General Psychiatry*, *35*, 773–782.
- Suokas, J., & Lönnqvist, J. (1991). Outcome of attempted suicide and psychiatric consultation: risk factors and suicide mortality during a five-year follow-up. *Acta Psychiatrica Scandinavica*, *84*, 545–549.
- Träskman-Bendz, L., Åsberg, M., Bertilsson, L., Sjöstrand, L. (1981). Monoamine metabolites in CSF and suicidal behaviour. *Archives of General Psychiatry*, *38*, 631–636. (Karolinska Institute, 1980).
- Weisman, A.D., & Worden, J.W. (1972). Risk-rescue rating in suicide attempt. *Archives of General Psychiatry*, *26*, 553–561.