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TITLE: Hopelessness and Eventual Suicide: A 10-Year Prospective Study of Patients Hospitalized With Suicidal Ideation

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ABSTRACT: The authors intensively studied 207 patients hospitalized because of suicidal ideation, but not for recent suicide attempts, at the time of admission. During a follow-up period of 5-10 years, 14 patients committed suicide. Of all the data collected at the time of hospitalization, only the Hopelessness Scale and the pessimism item of the Beck Depression Inventory predicted the eventual suicides. A score of 10 or more on the Hopelessness Scale correctly identified 91% of the eventual suicides. Taken in conjunction with previous studies showing the relationship between hopelessness and suicidal intent, these findings indicate the importance of degree of hopelessness as an indicator of long-term suicidal risk in hospitalized depressed patients.

TEXT:

During the last 25 years hopelessness has emerged as an important psychological construct for understanding suicide. Beck [n1] observed clinically that when depressed patients believe there is no solution to serious life problems, they view suicide as a way out of an intolerable situation. According to Beck's formulation, hopelessness is a core characteristic of depression and serves as the link between depression and suicide. Furthermore, hopelessness associated with other psychiatric disorders also predisposes the patient to suicidal behavior.

The development by Beck and his group of reliable and valid measures of suicidal intent among suicide attempters [n2,n3] and ideators [n4] as well as an instrument for measuring hopelessness (the Hopelessness Scale) [n5] spurred a series of studies investigating the relationships among hopelessness, depression, and suicidal behavior. An investigation of suicide attempters by Minkoff et al. [n6] found that the intensity of suicidal intent was more highly correlated with hopelessness than with depression. Hopelessness, as measured by the Hopelessness Scale, emerged as the moderator variable linking depression and suicidal intent. A validation study found that hopelessness accounted for 76% of the association between depression and suicidal intent in 384 hospitalized suicide attempters [n7].

Other investigators have supported the positive relationships among hopelessness, depression, and suicidal intent in attempters [n8-n11]. Hopelessness was found to correlate more strongly than depression with suicidal intent among drug abusing suicide attempters [n12] and to be a key determinant of suicidal intent in alcoholic suicide attempters [n13].

Finally, when patients who had been hospitalized for depression or suicidal risk rather than for a recent suicide attempt were studied, it was again found that hopelessness, rather than depression per se, was a determinant of suicidal intent [n14,n15].

The present investigation was designed to ascertain whether hopelessness, depression, or suicide ideation would predict eventual suicide in patients hospitalized because they had suicide ideation (ideators) but not because of a recent attempt. This longitudinal study also followed 406 suicide attempters over the same time period; the evaluation of these patients, however, will be described in a separate report.

The present study was part of a long-term project in which we tried to establish a useful and reliable nomenclature for suicidal behaviors, to operationalize certain qualifying variables such as "intent" and "lethality," and to determine the construct and predictive validity of these variables. In 1971 a committee on nomenclature of an NIMH task force on research in suicide [n16] proposed a tripartite classification of suicidal individuals into those who were currently thinking about suicide (ideators), those who had made a nonfatal suicide attempt (attempters), and those who had made a fatal suicide attempt (completers). The previously mentioned scales for measuring suicidal intent in attempters and ideators were developed to evaluate the utility of the new classification as well as to provide an empirical framework for testing hypotheses regarding the relationship of clinical variables to suicidal behaviors.

METHOD

Subjects

In this study a suicide ideator was defined as a person who seriously thought about, planned, or wished to commit suicide. This definition is consistent with the recommendations of the NIMH-commissioned task force on the classification of suicidal behaviors [n16]. The study cohort consisted of individuals who 1) were admitted to the psychiatric inpatient wards of the Hospital of the University of Pennsylvania or of the Philadelphia General Hospital between 1970 and 1975; 2) were considered to be suicidal by the referring or admitting physicians; 3) had not made a recent suicide attempt; 4) were between 17 and 65 years of age; and 5) were able and willing to give voluntary written consent to participate in the study.

Of the sample of 207 patients, 96 (46.4%) were men and 111 (53.6%) were women. In racial composition the sample was 62.3% (N=129) white and 37.7% (N=78) black. The mean \pm -SD age was 33.92 \pm 12.12 years and the mean \pm -SD educational attainment was 11.09 \pm 2.48 years. The marital status was 39.9% (N=81) single and 60.1% (N=122) "other." Protestants made up 42.5% (N=82) of the sample and 57.5% (N=111) were described as "other." Alcohol abuse was described by 79 (44.1%) of the subjects, whereas 24 (13.7%) described themselves as drug abusers. Previous suicide attempts were described by 60 (31.8%) of the subjects and 22 (13.8%) reported that at least one immediate family member had committed suicide. The diagnoses of the completers and noncompleters are presented in the Results section.

Assessment

Within 24-48 hours of admission to the hospital, eligible patients were asked for their consent to participate in a longitudinal study of suicidal behavior and were then interviewed. A clinical psychologist (such as M.K.) or psychiatrist conducted a detailed clinical interview and completed various relevant semistructured questionnaires and scales. Next, a research assistant independently administered the self-rating scales and standardized assessment instruments as soon as the patient was alert enough to give valid answers.

After the patients' hospital discharge, we implemented a program to maintain contact with all patients for at least 5 years or until the time of their death, if it occurred during the follow-up period. The purpose of the follow-up was to ascertain at each point in the follow-up whether the patient was alive or deceased and obtain interim histories about psychiatric hospitalizations and suicidal behaviors.

The comprehensive system used to establish periodic contact with the patients consisted of the following

steps: Whenever possible, patients themselves were contacted semiannually for the first 2 years and then annually by telephone. If the patient was inaccessible, collaterals (mostly family and friends) were used as informants. If no phone contact could be established with either source, first-class or certified mail was used to establish contact. If such attempts also failed to produce results, home visits were made by a social worker. If all of the above strategies failed, the patients were traced through cooperating social welfare or other agencies. During follow-up, contact was established with patients, their families, or relevant agencies in many other states and in several foreign countries.

If the follow-up indicated that the patient was deceased, appropriate agencies were contacted to verify cause, mode of death, and circumstances. In addition, the death records of the Philadelphia Medical Examiner's Office were scanned daily to determine whether any of the patients were on the list. When a patient died, the relevant medical examiner's or coroner's records were requested so we could verify cause of death and complete the relevant study questionnaires. Deaths that occurred in other states or countries were also investigated. In addition to the official data, members of the research team attempted to obtain additional information from members of the family or from friends as a variant of the "psychological autopsy." Five-year follow-ups were completed on 197 subjects; data regarding the cause, manner, and mode of death were obtained for all patients who died during the follow-up period.

Instruments

The following instruments were used.

The Beck Depression Inventory. The 1970 version of the Beck Depression Inventory is a 21-item self-report inventory. Each item consists of four alternative statements that represent gradations of a given symptom rated in severity from 0 to 3. The scale is scored by summing the item ratings; the total scores can range from 0 to 63. The instrument was either self-administered by the patients or read aloud by one of the research assistants.

The Hopelessness Scale. The Hopelessness Scale [n5] consists of 20 true-false statements that assess the extent of pessimism. Each of the 20 items is scored 1 or 0; the total score is the sum of the individual item scores. The possible range of scores is from 0 to 20. The method of administration was similar to the procedure used for the Beck scale.

The Scale for Suicide Ideation. This scale [n2] quantifies the severity of current suicidal ideas and wishes. It was developed on the basis of systematic clinical observations and interviews with suicidal patients. The scale includes 19 items; each of these is composed of three choices that range from 0 (least severe) to 2 (most severe) of the given construct. The total score is computed by summing the item ratings; the scores can range from 0 to 38. The items quantify the frequency and duration of suicidal thoughts as well as the patients' attitudes toward them. Subjective feelings of control regarding suicidal ideation are also assessed. The scale was completed by a clinician (such as M.K.) in a semistructured interview.

RESULTS

Of the 207 persons admitted to the study, 34 (16.4%) died of all causes. Fourteen members of the cohort (6.9%) were judged on the basis of reports by the Philadelphia Medical Examiner's Office or by another medical examiner's or coroner's office to have definitely committed suicide. The term "completers" is applied to those who died from suicide. The term "noncompleters" applies to all the other patients in the cohort.

With the exception of race, none of the patients' background characteristics described earlier significantly differentiated between the ideators who eventually committed suicide and the rest of the cohort. With respect to race, there was significant overrepresentation of white subjects among suicide completers: one

black subject (1.3%) out of 78 committed suicide compared with 13 white subjects (10.1%) out of 129.

Twenty-six (13.5%) of the noncompleters had initial *DSM-II* diagnoses of personality disorders, 16 (8.3%) had psychotic depressions, 71 (36.8%) had neurotic depressions, six (3.1%) had manic depressions, eight (4.1%) had involuntal melancholias, two (1.0%) had organic syndromes, 13 (6.7%) had schizoaffective schizophrenias, 23 (11.9%) had paranoid schizophrenias, 13 (6.7%) had other schizophrenia, one (0.5%) had an anxiety disorder, three (1.6%) had other neuroses, and four (2.1%) had other syndromes. In seven cases (3.6%) the diagnosis was uncertain.

Correspondingly, one (7.1%) of the ideators who eventually committed suicide had a personality disorder, two (14.3%) had psychotic depressions, five (35.8%) had neurotic depressions, one (7.1%) had manic-depressive depression, one (7.1%) had schizo-affective schizophrenia, two (14.3%) had paranoid schizophrenia, and two (14.3%) had other schizophrenias.

Twenty-two (13.8%) of the suicidal ideators reported that a family member had committed suicide, but only one of the eventual suicides described a close relative as having committed suicide. Again, a history of familial suicide was not significantly related to future completion within this sample of ideators.

Histories of alcohol abuse were described by 44.1% of the overall sample, and 13.7% acknowledged histories of drug abuse. Although none of the eventual suicides had had a history of drug abuse, five had histories of excessive alcohol abuse. However, neither of these variables significantly differentiated between completers and noncompleters.

Table 1 shows the test scores obtained on admission to the hospital categorized according to whether or not the ideators had committed suicide (completers). The Beck Depression Inventory and Hopelessness Scale scores indicated that the ideators were moderately to severely depressed and moderately to severely pessimistic about the future [n4]. The mean suicide ideation score revealed severe suicidal ideas.

TABLE 1. Depression, Hopelessness, and Suicide Ideation Among Psychiatric Inpatients Who Did (N=14) or Did Not (N=193) Complete Suicide

Scale	Completers			Noncompleters			t	df
	N	Mean	SD	N	Mean	SD		
Beck Depression Inventory	14	31.50	12.51	191	25.45	11.43	1.90	203
Hopelessness Scale	11	13.27	4.43	154	8.94	6.05	n1 2.33	163
Scale for Suicide Ideation	14	11.71	7.58	191	12.81	8.72	0.46	203

n1 Difference between groups: $p < .05$.

As indicated in table 1, the Hopelessness Scale was the only scale that differentiated significantly between the two groups of ideators: the ideators who eventually died by suicide had higher mean +/-SD hopelessness scores (mean=13.27+/-4.43) than did the rest of the cohort (mean=8.94+/-6.05). Because the Hopelessness Scale was undergoing development at the time the study began, it was not given to the first 42 patients; 11 of the eventual suicides had completed this scale.

Since the Hopelessness Scale was significantly related to eventual suicide, an analysis was made to determine whether or not the pessimism item of the Beck inventory would also predict eventual suicide. The mean score of the completers was significantly higher than that of the noncompleters ($p < .05$, two-

tailed t test). This item was endorsed (with varying degrees of severity) by 13 out of the 14 patients who ultimately committed suicide. The point-biserial correlation between the ratings on the pessimism item and eventual suicide was .18 ($p < .05$, two-tailed) for the 205 patients for whom complete data on the Beck inventory were available.

The data were also analyzed to determine the predictive power of the Hopelessness Scale. The sample was dichotomized according to low and high scores on the Hopelessness Scale. A cutoff score of 9 on the Hopelessness Scale was found to clearly separate the noncompleters from the completers. Only one (9.1%) of the completers had obtained a score of 9 or less, whereas 90.9% had obtained a score of 10 or more.

An important question regarding the practical application of the Hopelessness Scale for predicting ultimate suicide revolves around the relative proportion of true positives to false positives above the cutoff point. The number of true positives was 10 out of 86 cases (11.6%), and the number of false positives was 76 out of 86 cases (88.4%). Below the cutoff point were one false negative (1.3%) and 78 true negatives (98.7%).

DISCUSSION

These results support previous reports indicating the relationship of hopelessness to suicidal wishes and behaviors [n6-n15]. Furthermore, the present results point to the utility of hopelessness as a construct in the assessment of suicidal risk. Previous studies of the relationship between hopelessness and suicidal behavior have evaluated the correlation of hopelessness with current intent among suicide attempters [n6-n13] and ideators [n14,n15]. The present study indicates the role of present hopelessness in predicting future suicides among ideators over a relatively long time span.

The finding that the severity of depression did not significantly differentiate between the ideators who ultimately committed suicide and the rest of the cohort is consistent with previous studies which showed that depression is not significantly related to suicidal intent when hopelessness is controlled. Nonetheless, the pessimism item of the Beck Depression Inventory appears to have a potential for suggesting suicidal risk even though the full scale is not predictive.

The practical utility of the Hopelessness Scale for estimating suicidal risk is worthy of consideration. The present study simply indicates its potential value in patients considered by the staff as suicidal at the time of hospitalization. However, it should be kept in mind that the overwhelming majority of the patients with a Hopelessness Scale score over 9 did not commit suicide. Furthermore, a low Hopelessness Scale score is certainly no guarantee that a given patient will not commit suicide -- even though only one patient with a Hopelessness Scale score below 10 eventually committed suicide. Nonetheless, the finding that the high scorers on the Hopelessness Scale constituted the group at greater risk for suicide suggests that those individuals should be observed particularly closely for suicide ideation and should be watched carefully and retested during subsequent psychiatric episodes.

Even though the Scale for Suicide Ideation did not predict ultimate suicide in this ideator sample, the intensity of suicidal wishes among attempters appears to be indicative of short-term risk of death by suicide. Pierce [n17] has reported that a measure of suicidal intent can predict completed suicides when the intent is assessed right after the penultimate attempt. A more recent study [n18] showed that the measure of suicidal intent can identify eventual suicides within a 2-year period after a nonfatal attempt. Among ideators, however, the degree of hopelessness appears to be a more powerful indicator of suicidal risk than the measurement of suicidal intent at the time of hospitalization.

Further research is needed to confirm the present findings and to address more fully the precise relationship between hopelessness and ultimate suicide. Although the present results indicate that such a

relationship probably exists, we can only speculate about the mechanism underlying the relationship. We do not consider hopelessness to be a stable trait but a variable psychological state that escalates to predictable levels of intensity during times of intrapsychic disturbance. For example, some individuals who become depressed display more hopelessness than do other individuals at the same level of depression. When people prone to hopelessness become depressed, they experience higher levels of suicidal intent than do other depressed patients. Similarly, patients with psychiatric disorders other than depression may show a consistently high level of hopelessness associated with each episode. Eventually, in a certain proportion of cases, the recurrent high levels of hopelessness may be reflected in fatal suicide attempts. In other words, the level of hopelessness may be relatively consistent for each psychiatric episode; high hopelessness during any one episode may be predictive of high hopelessness during a later episode and, thus, may lead to eventual suicide.

Another way of conceptualizing hopelessness is in terms of specific cognitive vulnerability at the time of a psychiatric decompensation or crisis. The recurrent episodes of hopelessness may reflect the activation of specific cognitive schemas organized in a matrix of negative expectations. When these negative schemas are activated by life experience they tend to have a controlling effect on the nature of the patient's beliefs regarding the outcome of his or her immediate and future goals and well-being.

Therapeutic interventions that reduce hopelessness most rapidly may also lower suicidal potential. There is evidence in the literature that cognitive therapy acts faster in lowering hopelessness than does pharmacotherapy [n19]. Thus, prompt cognitive interventions or a combination of cognitive therapy and pharmacotherapy may be directed at reducing hopelessness and, consequently, suicidal risk. That the effect of cognitive therapy may be relatively enduring and thus provide a more prolonged protection against suicide is supported by studies that show a lower relapse rate among patients treated with cognitive therapy than with other antidepressant treatment [n20].

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REFERENCES:

[n1.] Beck AT: Depression: Clinical, Experimental, and Theoretical Aspects. New York, Harper & Row, 1967

[n2.] Beck AT, Schuyler D, Herman I: Development of suicidal intent scales, in *The Prediction of Suicide*. Edited by Beck AT, Resnik HLP, Lettieri DJ. Bowie, Md, Charles Press, 1974

[n3.] Beck RW, Morris JB, Beck AT: Cross-validation of the suicidal intent scale. *Psychol Rep* 34:445-446, 1974

[n4.] Beck AT, Kovacs M, Weissman A: Assessment of suicidal intention: the Scale for Suicide Ideation. *J Consult Clin Psychol* 47:343-352, 1979

[n5.] Beck AT, Weissman A, Lester D, et al: The measurement of pessimism: the Hopelessness Scale. *J Consult Clin Psychol* 42:861-865, 1974

- [n6.] Minkoff K, Bergman E, Beck AT, et al: Hopelessness, depression, and attempted suicide. *Am J Psychiatry* 130:455-459, 1973
- [n7.] Beck AT, Kovacs M, Weissman A: Hopelessness and suicidal behavior: an overview. *JAMA* 234:1146-1149, 1975
- [n8.] Wetzel RD: Hopelessness, depression, and suicide intent. *Arch Gen Psychiatry* 33:1069-1073, 1976
- [n9.] Dyer JAT, Kreitman N: Hopelessness, depression and suicidal intent in parasuicide. *Br J Psychiatry* 144:127-133, 1984
- [n10.] Goldney RD: Attempted suicide: correlates of lethality (doctoral thesis). Department of Psychiatry, University of Adelaide, Australia, 1979
- [n11.] Petrie K, Chamberlain K: Hopelessness and social desirability as moderator variables in predicting suicidal behavior. *J Consult Clin Psychol* 51:485-487, 1983
- [n12.] Weissman A, Beck AT, Kovacs M: Drug abuse, hopelessness, and suicidal behavior. *Int J Addict* 14:451-464, 1979
- [n13.] Beck AT, Weissman A, Kovacs M: Alcoholism, hopelessness and suicidal behavior. *J Stud Alcohol* 37:66-77, 1976
- [n14.] Bedrosian RC, Beck AT: Cognitive aspects of suicidal behavior. *Suicide Life Threat Behav* 2:87-96, 1979
- [n15.] Wetzel RD, Margulies T, Davis R, et al: Hopelessness, depression, and suicide intent. *J Clin Psychol* 41:159-160, 1980
- [n16.] Beck AT, Davis JH, Frederick CJ, et al: Classification and nomenclature, in *Suicide Prevention in the Seventies*. Edited by Resnik HLP, Hathorne BC. Rockville, Md, National Institute of mental Health Center for Studies of Suicide Prevention, 1973
- [n17.] Pierce DW: Suicide intent in self injury. *Br J Psychiatry* 130:377-385, 1977
- [n18.] Pallis JJ, Gibbons JS, Pierce DW: Estimating suicidal risk among attempted suicides, II: efficiency of predictive scales after the attempt. *Br J Psychiatry* 144:139-148, 1984
- [n19.] Rush AJ, Beck AT, Kovacs M, et al: Comparison of the effects of cognitive therapy and pharmacotherapy on hopelessness and self-concept. *Am J Psychiatry* 139:862-866, 1982
- [n20.] Kovacs M, Rush AJ, Beck AT: One-year follow up of depressed patients treated with cognitive therapy or pharmacotherapy. *Arch Gen Psychiatry* 38:33-39, 1981