Identifying Suicide Risk Groups Among Attempted Suicides

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IN a previous study, support was found for two hypotheses on the relationship between attempted and completed suicide (*1*). The first was that persons who have previously attempted suicide are more likely to commit suicide than those who have not. The study found that, compared with a yearly suicide rate of 0.14 per 1,000, or 1 suicide in 7,000 persons, for the general population 18 years and older of Philadelphia, the rate for a sample of attempted suicides was 19.5 per 1,000, or 1 suicide in 50 persons, during 1 year following the attempt. The second hypothesis was that the more closely attempted suicides approximate completed suicides in personal and social characteristics, the greater the likelihood of death from a subsequent attempt. The study demonstrated that, among age, sex, and race groups, persons 45 years of age and older, men, and whites were at higher risk, that is, had a higher death rate from suicide, than persons under 45, women, and nonwhites.

Many investigators have suggested that a number of other factors are associated with suicide risk (*2–7*). Some are personal characteristics, others relate to the social environment, and still others concern the interaction of the two. Some factors are objective and readily determined, such as occupation, method, and marital status; others are rather subjective, for example, circumstances leading to the attempt and previous pattern of adjustment; and still others are even more elusive because of the important part played by unconscious forces, such as intent, motivation, hostility. Although a multiplicity of factors have been suggested as being related to risk, few have been subjected to empirical verification.

The purpose of this study is (*a*) to extend the investigation of risk by relating factors other than age, sex, and race to an acceptable criterion, and (*b*) to develop a quantitative scale for identifying high- and low-risk groups. The factors are limited to those which may be determined from information in routine police reports of attempted suicides. The sample of attempted suicides is the same as the one used in the previous study of suicide risk among attempted suicides (*1*) and in a broader study of attempted suicide (*8*). It consists of 1,112 consecutive attempts by persons 18 years of age and older who came to the attention of the Philadelphia Police Department in the 2-year period from April 1959 to April 1961. The sex, race, and age distributions show an overrepresentation of women, nonwhites, and younger persons in the sample: 68 percent are women, 30 percent are nonwhites, and 78 percent are between 18 and 45 years of age, compared with 53 percent women, 24 percent nonwhite, and 51 percent between 18 and 45 years in the general population of Philadelphia.

Method and Results

Exclusive of age, sex, and race, 27 factors in the police reports were reviewed to select those related to risk on the basis of some meaningful rationale. For example, with respect

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to marital status it was hypothesized that separated, divorced, or widowed persons constituted a higher risk group than single or married persons because they had suffered a disruption in an important area of interpersonal relationships. Such persons might be reacting to the disruption itself or to the loss of an important source of support in dealing with stressful situations. Another possible risk factor is the method used in the attempt. It was hypothesized that the use of highly efficient methods such as firearms, jumping, hanging, or drowning reflected more serious intent on self-destruction than the use of less efficient methods such as poison, piercing or cutting, or gas or carbon monoxide. Impulsiveness of the act is still another example. Persons who made the attempt after some planning or premeditation were assumed to be more serious about killing themselves than those who acted on the spur of the moment.

Of the 27 factors, 7 were discarded because they did not meet the criterion of a meaningful rationale in relation to risk: country of birth; month, day of the week, and time of day of the attempt; person reporting the attempt; where the attempt occurred; and type of poison used. Seven other factors were eliminated even though they satisfied the criterion of risk because there were a large proportion of cases, ranging from 38 to 93 percent, for which no information on these factors was available and no assumption could be made regarding the high- and low-risk categories into which the cases could be classified. The seven factors were occupation; circumstances leading to or precipitating the attempt (according to self-report and the report of a respondent other than the person making the attempt); time interval between the attempt and its discovery; motivation (Was the person trying to change or manipulate the situation to meet his own needs? Was he trying to get even with someone? Was he attempting to withdraw from a painful situ-

Suicide rates per 1,000 population among 1,112 attempted suicides, by high- and low-risk categories of risk-related factors

Factor	High-risk category	Suicide rate	Low-risk category	Suicide rate
Marital status	Separated, divorced, widowed	41. 9	Single, married	12. 4
Employment status [1]	Unemployed, retired	24. 8	Employed [2]	16. 3
Living arrangements	Alone	71. 4	With others	11. 1
Health	Poor (acute or chronic condition in the 6-month period preceding the attempt).	18. 0	Good [2]	13. 8
Mental condition	Nervous or mental disorder, mood or behavioral symptoms including alcoholism	17. 6	Presumably normal, including brief situational reactions [2]	11. 7
Medical care (within 6 months)	Yes	13. 9	No [2]	14. 6
Method	Hanging, firearms, jumping, drowning	45. 5	Cutting or piercing, gas or carbon monoxide, poison, combination of methods, other	13. 1
Potential consequences of method	Likely to be fatal [3]	31. 5	Harmless, illness-producing	6. 0
Police description of attempted suicide's condition	Unconscious, semiconscious	16. 3	Presumably normal, disturbed, drinking, physically ill, other	13. 0
Suicide note	Yes	22. 5	No [2]	13. 7
Intent to kill (self-report)	Yes	5. 8	No [2]	18. 2
Previous attempt or threat	Yes	22. 6	No [2]	13. 3
Disposition	Admitted to psychiatric evaluation center	21. 0	Discharged to self or relative; referred to family doctor, clergyman, or social agency; or other disposition	11. 6

[1] Does not include housewives and students.
[2] Includes cases for which information on this factor was not given in the police report.
[3] Several criteria used in estimating whether the method used was likely to be fatal.

ation?); impulsiveness of the attempt; and intent to kill himself (in the judgment of the investigator).

The validity of the remaining 13 factors was tested against the criterion of risk, that is, death from suicide, used in the previous study (*1*). Official records showed 16 suicide deaths for the sample within a 1-year period following the attempt. Suicide rates were computed for the high- and low-risk categories for each of the 13 factors (see table). The difference between high- and low-risk categories was in the predicted direction for 11 factors: marital status, employment status, living arrangements, health, mental condition, method, potential consequences of the method, police description of the person's condition, presence of suicide note, history of attempt or threat, and disposition of the case. The difference was not as predicted for two factors: intent to kill (self-report) and medical care within 6 months prior to the attempt.

For each of seven factors, cases for which information on the factor was not given in the police report were put in the low-risk category. Since the police look for circumstances having a bearing on the attempt, it was assumed that the lack of information meant that the factor was not relevant in the case. The seven factors were employment, health, mental condition, medical care, suicide note, intent to kill, and previous attempts or threats.

Several criteria were used in estimating whether the method was likely to be fatal. For poisons, used by more than 60 percent of the group, the determination was based on dosages considered lethal in several texts on poisons (*9–12*). In doubtful cases, Dr. Marvin Bleiberg, then assistant professor of pharmacology, Jefferson Medical College, served as consultant; for drugs too new to be listed in texts, the drug company was contacted for information. For methods other than poisoning, the criteria were less objective and were based on the amount of physiological damage, the physical condition in which the person was found, and the likelihood of death if intervention had not occurred.

To take into account the compounding or cumulative effect of the several high-risk categories, a scale was developed based on the 14 factors for which the difference in suicide rates between high- and low-risk categories was in the predicted direction: 11 shown in the table and 3 (age, sex, and race) reported in the earlier study (*1*). Each case was then reviewed and given a scale score based on a weight of 1 for each high-risk category. A total score of 14 was possible, but the actual scores ranged from 0 to 10, with a median of 2.6. Using a score of 4 as the cutoff point, the suicide rate for persons below the cutoff point was 0.0 per 1,000 population; for those with a score of 4 or more, 35.2. The difference between the two rates is significant at the .001 level of confidence.

Discussion and Conclusions

This study has demonstrated that (*a*) factors other than age, sex, and race are associated with suicide risk and (*b*) risk-related factors can be combined into a quantitative scale for identifying high and low groups. The scale should have greater predictive value as other factors are identified through examination of routine police reports or through special studies by professional personnel, validated against an acceptable criterion, and incorporated into the scale. The small number of suicide deaths did not warrant the use of a weighting system that took into account the differential contribution of the several factors. At a later time, using a greater number of cases, it should be possible to develop such a system, which may have an increased predictive value.

The practical implications of the study are clear. It has already been shown that the likelihood of death from suicide is enhanced among attempted suicides (*1*). Therefore, such persons should be directed toward appropriate resources in the community for help with their problems. Since most psychiatrists consider hospitalization the preferred treatment plan for persons who are suicidal, the scale should be helpful in reaching such a decision.

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Program Notes

A home aid program in Florida trains housewives to go into an unfamiliar home in emergencies to cook, write letters, provide transportation, and perform similar services. The operation is part of the program of the State Employment Service at St. Petersburg for the placement of older workers. The women, from 40 to 80 years old, are available for part-time and temporary work at hourly fees plus bus fare. Their services are less closely supervised than those of homemakers.

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The Boulder City-County Health Department promotes use of a medical identification card, to be carried at all times to give pertinent and vital information to attending physicians in event of disaster. In Boulder County, such a card, developed by the county medical society, is available in offices of all private physicians.

The American Medical Association has adopted a hexagon-shaped disc with the insignia of the medical profession on one side, to be worn on the wrist, ankle, or around the neck, to indicate that the wearer has a special medical problem and that there are vital medical facts on the opposite side of the device or on a card carried in the person's billfold or purse.

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A new checklist, designed to promote safety for older and handicapped persons, surveys every household area, calling attention to hazards in spilled grease, weak railings, eye-level clothes hooks, faulty room heaters, overloaded electrical circuits, unmarked drugs, and trailing apron sashes. It is available free from the National Society for Crippled Children and Adults, 2023 West Ogden Ave., Chicago, Ill.

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The most recent publications in the "Alcoholism and California" series of 10 study reports, prepared by the division of alcoholic rehabilitation of the California State Department of Health are "The Development of a Screening Device for Risk Populations" (No. 7) and "Health and Economic Status of Alcoholics Before Treatment" (No. 8). Studies previously published, except for two out of print, are: "A Study of Community Concepts and Definitions" (No. 1), "Selected Aspects of the Prospective Follow-up Study, a Preliminary Review" (pt. 1, No. 2), "Follow-up Studies of Treated Alcoholics, Description of Studies" (No. 5), "Follow-up Studies of Treated Alcoholics, Mortality" (No. 6). "Recovery Establishments for Alcoholics" and "Criminal Offenders and Drinking Involvement" are in process of publication.

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The Connecticut Department of Consumer Protection has taken action to curb sale of candy "pills" in realistic drug bottles. After an exchange of letters, a Rhode Island candy maker agreed to have his candy pills off the market within 30 days and to drop the product altogether.

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A manufacturer of spray paint for models and other toys informed the Baltimore City Health Department that he would change his paint's formula after the department notified him that sale of the paint, which contained 4 to 30 percent lead, violated a city ordinance. The ordinance requires a warning label on all paint with a lead content higher than 1 percent and forbids use of such paint on toys.