Suicide Risk Among Persons Attempting Suicide

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THE DISSIMILARITY between persons who attempt suicide and those who complete the act has been demonstrated with respect to many important personal and social characteristics (*1–3*). For example, men, older persons, and whites are overrepresented in completed suicide, while women, younger persons, and nonwhites are overrepresented in attempted suicide. Nevertheless, the most reasonable assumption about the two groups is that the population of completed suicides is drawn from that of attempted suicides but, as suggested by Crocetti (*4*), not on a random basis. Two complementary hypotheses are involved: (*a*) persons who have previously attempted suicide are more likely to commit suicide, that is, are at greater risk, than persons who have not, and (*b*) among attempted suicides, the more closely individuals approximate those who commit suicide in personal and social characteristics, the greater the likelihood of their succeeding in killing themselves, that is, the greater their risk.

The first hypothesis receives some support from data on histories of suicidal behavior (attempts, threats, or communication of intent) in studies of completed suicide (*5–7*); the second hypothesis cannot be tested by these studies because the pertinent data are not provided, but the studies do provide clues regarding the characteristics of individuals within a group of attempted suicides most likely to kill themselves in a subsequent attempt. The studies have important limitations as far as their use in testing the two hypotheses is concerned: (*a*) it is unclear whether persons not classified as having made previous attempts in fact did not do so or merely represented those for whom no information was available, and (*b*) it is not always possible to determine what percentage of the sample made previous attempts since attempts and threats are sometimes combined into one category.

The present study avoids these limitations by following a sample of attempted suicides with respect to the number of deaths from suicide within a 1-year period. This makes it possible to compare the suicide risk of attempted suicides and of subgroups within the sample with analogous groups in the general population. For the purposes of this study, the general population has been considered a group that has not attempted suicide. Several studies of attempted suicide have presented data on subsequent mortality from suicides (*8–10*), but none used general population data as a baseline. Moreover, these studies overlook the concept of risk and tend to minimize the problem by stating that the number of suicide deaths represents a very small proportion of those making an attempt. Such interpretations confuse the issue of risk by equating a small percentage of deaths with little risk or significance.

Methods and Results

The sample of attempted suicides in the present study is the same as the one used in a broader study (*3*) and consists of 1,112 consecutive attempts by persons 18 years of age and older who

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came to the attention of the Philadelphia Police Department in the 2-year period from April 1959 to April 1961. Women, nonwhites, and younger persons are overrepresented in the sample: 68 percent are women, 30 percent nonwhites, and 78 percent between 18 and 45 years of age, compared with 53 percent women, 24 percent nonwhites, and 51 percent between 18 and 45 years old in the general population of Philadelphia.

A search of the official death records by Mrs. Sophie Abraham of the division of statistics and research, Philadelphia Department of Public Health, showed 16 persons in the sample died by suicide within a year after their attempted suicide. The suicide rate per 1,000 population was computed for the total sample, as well as for the following subgroups: persons under 45 and those 45 years and older, men and women, whites and nonwhites. Since the sample differed from the general population in sex, race, and age distribution, suicide rates were adjusted for these characteristics. Rates were also computed for the general population, using the average number of suicides for the 5-year period 1957–61 as the most reliable yearly figure and using the 1960 census of population in Philadelphia as the population base.

The comparison between the suicide rates for the attempted suicides and the rates for the general population (see table) indicates that the risk of completed suicide is much greater for attempted suicides than for the general population. The suicide rate is 0.14 per 1,000 for the general population 18 years of age and older and 19.51, or approximately 140 times greater for the sample of attempted suicides. Stated another way, in the general population the rate is approximately 1 suicide in 7,000 persons whereas in the sample of attempted suicides the rate is about 1 in 50. The risk is also considerably greater for each subgroup of the sample than for its counterpart in the general population, ranging from about 85 times greater for women to about 200 times greater for persons 45 years and over.

The data also show that, as subgroups approximate the characteristics of completed suicides with respect to sex, race, or age, risk increases. Thus, although some characteristics appear to contribute more to the suicide rate than others, the risk is greater for men than for women, for whites than for nonwhites, and for persons 45 years of age and older than for those under 45. These differences follow the trends in the rates for the general population.

Comparison of suicide rates per 1,000 population, 18 years and older, in the general population and in attempted suicides, by age, sex, and race

Group	General population	Attempted suicides [1]
Age:		
45 years and over	0.19	37.51
Under 45 years	.10	8.67
Sex:		
Male	.22	37.08
Female	.08	6.39
Race:		
White	.16	21.81
Nonwhite	.08	11.47
Total	.14	19.51

[1] Adjusted for age, sex, and race.

The compounding effects of the three factors on risk can be estimated. Presumably, the greater the number of characteristics associated with completed suicide in an individual, the greater the risk. The risk is lowest for the subgroup with none of the characteristics associated with increased risk, that is, nonwhite women under 45 (rate zero); higher for the combined subgroups with one of the characteristics, that is, white women under 45, nonwhite women 45 and older, and nonwhite men under 45 (combined rate 8.55); still higher for the combined subgroups with two characteristics, that is, white men under 45, nonwhite men 45 and older, and white women 45 and older (combined rate 16.21); and highest for the subgroup with three characteristics, that is, white men 45 and older (rate 68.27). Because of the fragility of the data, the compounding effect of finer age categories could be estimated only for white men 45 years and older. The risk is considerably greater for white men 65 years and older (rate 121.21) than for white men 45 to 64 years (rate 44.12). For white men 65 and older, the suicide rate represents 1 person in about 8 in the sample compared with 1 in about 2,100 in the general population. These compounding effects of the three characteris-

tics are basically comparable to those which may be demonstrated for the general population.

For the sample, within the 1-year period following the attempt, there were 13 deaths from other, presumably natural causes. The death rate from such causes, adjusted for sex, race, and age, was 25.94 per 1,000 for the sample, or about one and one-half times greater than the rate of 16.49 for the general population 18 years of age and older. While this suggests that the sample is a somewhat sicker group than the general population, the difference in death rate from natural causes appears to be inconsequential compared with the difference between the two groups in suicide rate.

Conclusions

The data support the two hypotheses about the relation between attempted and completed suicide: (*a*) persons who make an attempt are at a much higher risk of suicide than those who do not, and (*b*) among the attempted suicides, the more closely individuals approximate completed suicides with respect to sex, race, or age, the higher their suicide risk. The data also suggest that risk is accentuated by the compounding or cumulative effect of the three characteristics, but this needs to be more fully tested on a larger sample of attempted suicides. Further studies are also needed using characteristics of completed suicide other than sex, race, and age, such as method of suicide and presence of depression, to estimate their effect on risk. Since the relationship between the number of characteristics and their compounding effect is not linear, it is clear that any weighting system will have to take into account not only the number of characteristics but also their differential effects.

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Discoloration of Teeth by Antibiotics

Three types of widely used tetracycline antibiotics can discolor children's teeth, probably permanently, the Food and Drug Administration has recently advised physicians and dentists. The drugs are tetracycline, chlortetracycline, and oxytetracycline (terramycin).

Manufacturers of these antibiotics have been directed to include a notice in the labeling that use during tooth development (last trimester of pregnancy, neonatal period, and early childhood) may cause discoloration. FDA said information available to date reveals no hazard to health.

World Population Growth

Increased attention in the United States to the problem of world population growth and how to deal with it is signified by two recent developments, a report from the National Academy of Sciences and a statement of U.S. policy before the United Nations.

Declaring that "other than the search for world peace, no problem is more urgent," the NAS report recommends international action to promote effective control of excessive population growth through voluntary family planning. Specifically, the report calls for:

- Increased support of training in demography and in social and biomedical sciences concerned with problems of population.
- Expansion of research laboratories for scientific investigation of biomedical aspects of human reproduction.
- International cooperation in studies concerned with voluntary fertility regulation and family planning, with active participation by the U.S. Government in fostering such cooperation.
- Improvement and enlargement of programs in the United States for training family planning administrators.
- Establishment of a committee by the National Academy of Sciences to stimulate and coordinate programs directed toward solution of problems of uncontrolled growth of populations.

The recommendations are based on study of population growth trends and social and biomedical factors affecting those trends.

At the present rate of increase, the world population will double every 35 years, producing a population of 6 billion by the year 2000 and about 25 billion by the year 2070. "Such rapid population growth, which is out of proportion to present and prospective rates of increase in economic development, imposes a heavy burden on all efforts to improve human welfare," the report observes. This problem can be successfully attacked "by developing new methods of fertility regulation and implementing programs of voluntary family planning widely and rapidly throughout the world."

Emphasizing the need for training and research regarding dissemination and acceptance of information, the report states: "Effective voluntary control of family size essentially depends upon the successful interaction of two variables: level or intensity of motivation and the availability and utility of procedures. When motivation is high and sustained, difficult procedures for controlling fertility can be used successfully, but when motivation is weak and erratic, simple procedures that impose few demands are essential."

The report describes developments in fertility research and concludes that they are sufficiently promising to warrant concentrated effort directed toward improving and enlarging the present battery of contraceptive methods. Such research will also provide information that can be applied to overcoming sterility.

The NAS report, "The Growth of World Population," was prepared by a special panel led by Dr. William D. McElroy of Johns Hopkins University and issued by the academy's Committee on Science and Public Policy, headed by Dr. George B. Kistiakowsky of Harvard.

According to the policy statement before the United Nations, the United States has offered to "help other countries, upon request, to find potential sources of information and assistance on ways and means of dealing with population problems." The statement was presented in December 1962 by Richard N. Gardner, Deputy Assistant Secretary of State for International Organization Affairs, in support of a resolution on population growth and economic development and has been published by the Agency for International Development.

"The United States will not suggest to any other government what its attitudes or policies should be," the document states, but the United States believes that obstacles should not be placed in the way of other governments which seek solutions to population problems.

The policy statement also notes that the United States is concerned about the social consequences of its own population trends and is devoting attention to them.

Recently, the Public Health Service contributed $500,000 to the World Health Organization to establish a research unit in human reproduction.