Effect of Suicide Prevention Centers on Suicide Rates in the United States

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THE ESTABLISHMENT of the Los Angeles Suicide Prevention Center in the 1950s provided a model for the establishment of suicide prevention centers in other communities. In 1966, the National Institute of Mental Health created a Center for Studies in Suicide Prevention, and the stimulus from this center as well as the experience and encouragement of the staff of the Los Angeles center led to the formation of more than 200 suicide prevention centers in communities across the nation.

The critical question stemming from the proliferation of suicide prevention centers is: Have they prevented suicides? Bagley (*1*), in a study to assess the effect of suicide prevention centers on the suicide rates in England, found that cities with such centers experienced a decline in suicide rates whereas cities without prevention centers experienced a rise in suicide rates. In the United States only one report of a study similar to Bagley's has been published, to my knowledge. In this report, Weiner (*2*) compared cities in California —two with and two without suicide prevention centers. He reported no discernible effect of the centers on the suicide rates in these four cities.

The preceding two studies are inadequate from our viewpoint. Bagley's study may have no valid-

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ity for the United States because England's health care delivery system and public attitudes toward health care differ from ours. And Weiner's sample of four U.S. cities is inadequate for reliable conclusions.

The first systematic study of the effect of suicide prevention centers on suicide rates in the United States was conducted in 1973. A preliminary analysis was made of the most recent available published data, and the suicide rates in 1960 and 1968 in the major U.S. metropolitan areas were compared. Government publications (*3, 4*) listed 27 cities as having no suicide prevention centers in 1967 or 1969, and the suicide rates for 1968 were computed for 25 of these cities, according to the number of suicides for each city (*5*) and estimates of the cities' 1968 populations derived from the 1960 and 1970 census figures. The suicide rates in 1960 were obtained from Massey (*6*).

The suicide rates for the 25 cities without suicide prevention centers did not change significantly from 1960 to 1968—the mean rates were 9.2 for 1960 and 9.5 for 1968 ($t=0.61$, $df=24$). For 17 cities listed as having prevention centers in 1967, the suicide rates also did not change significantly—the mean rates were 12.5 in 1960 and 12.1 in 1968 ($t=0.58$, $df=16$).

Of the cities without prevention centers from 1960 to 1968, 14 showed a decrease in suicide rates and 11 showed an increase. Of the cities with prevention centers, 8 showed a decrease and 9 an increase in suicide rates. Unfortunately, the two samples of cities are not comparable. The cities with suicide prevention centers were much larger than the cities without such centers, and their suicide rates also were higher. Therefore, a more controlled study was conducted in which data on suicide rates in 1969 were used.

Method

Unpublished data on suicide rates in 50 cities were obtained for 1969 from the National Center for Health Statistics, and data were obtained for 1960 from Massey (*6*). Three samples of cities were obtained—those with suicide prevention centers established by 1967, those with centers established by 1969, and those without centers—and changes in suicide rates from 1960 to 1969 were determined for these three samples.

To control for population size, eight cities were selected from each sample. In 1969, four cities in each sample had populations of 748,000 to 1,035,000, and four in each sample had populations of 1,333,000 to 2,402,000. The changes in suicide rates from 1960 to 1969 were examined by a three-way analysis of variance for repeated measures (*7*).

Results

The suicide rates per 100,000 population of the cities without suicide prevention centers in 1969 rose significantly—from 9.4 in 1960 to 10.5 in 1969 ($t=2.51$, $df=18$, two-tailed $P<0.05$). For cities with suicide prevention centers by 1969 (but not by 1967), suicide rates increased significantly—from 10.5 in 1960 to 11.3 in 1969 ($t=2.13$, $df=12$, two-tailed $P<0.06$). The suicide rates of cities with prevention centers by 1967 rose, but not significantly—from 12.1 in 1960 to 13.0 in 1969 ($t=1.51$, $df=15$, two-tailed $P<0.20$).

The results of the analysis when population size was controlled for are shown in tables 1 and 2. The only significant difference was that the suicide rates were higher in 1969 than in 1960. The suicide rates for the smaller cities also tended to be high, but the difference was not statistically significant.

Discussion

When population size of cities is controlled for, the suicide prevention centers do not appear to have a statistically significant effect on the suicide rates of cities. This finding is in contrast to that reported for England by Bagley (*1*). There may be two reasons for this discrepancy. First, perhaps it is too soon to expect an ameliorative effect on sucide rates from suicide prevention centers. Thus, a study like the present one should be repeated when data from later years become available. Replication is especially important because in 1969 many U.S. regions adopted the new international standards for reporting deaths. Thus, there may be differences between the suicide rates in 1960 and 1969 attributable to this change in reporting. (The fact that not all regions had adopted the new standards in 1969 may also contribute to the variance in the data reported in this study.)

Second, the suicide prevention centers in England do differ from those in the United States. In England, all the centers are maintained by the

Table 1. Suicide rates per 100,000 population in cities with and without suicide prevention centers in 1960 and 1969, by population size in 1969

Cities[1]	1960	1969
Without centers		
Small cities:		
Bridgeport, Conn.	9.6	9.7
Louisville, Ky.	10.1	11.0
Rochester, N.Y.	10.2	11.9
New Orleans, La.	7.4	6.6
Large cities:		
San Diego, Calif.	13.3	16.9
Newark, N.J.	6.9	8.7
Houston, Tex.	9.5	13.1
Pittsburgh, Pa.	8.3	8.0
With centers by 1967		
Small cities:		
Fort Worth, Tex.	10.3	11.2
Phoenix, Ariz.	13.1	14.2
Tampa, Fla.	17.3	15.7
Portland, Oreg.	12.9	15.5
Large cities:		
Buffalo, N.Y.	7.6	6.9
Atlanta, Ga.	10.1	11.0
Milwaukee, Wis.	10.1	15.3
St. Louis, Mo.	9.0	8.5
With centers by 1969		
Small cities:		
Sacramento, Calif.	16.5	17.4
Dayton, Ohio	9.1	10.2
San Antonio, Tex.	9.5	9.3
San Jose, Calif.	14.0	13.7
Large cities:		
Dallas, Tex.	7.9	11.7
Minneapolis-St. Paul, Minn.	8.6	8.6
Baltimore, Md.	9.4	10.4
Cleveland, Ohio	10.8	11.7

[1] For this analysis, small cities had populations of 748,000–1,035,000 and large cities had populations of 1,333,000–2,402,000 in 1969.

Table 2. Results of the analysis of variance on the data in table 1

Variable	F ratio	df
A, presence of suicide prevention center	0.91	2,18
B, size of cities	3.02	[1]1,18
A × B	1.98	2,18
C, year	8.98	[2]1,18
A × C	0.13	2,18
B × C	2.62	1,18
A × B × C	0.38	2,18

[1] $P<0.10$. [2] $P<0.01$.

Samaritans (*8*) and share similar procedures. The centers in the United States are quite heterogeneous and range considerably in their services and procedures (*9*). Furthermore, in England family physicians are used by more of the general population than in the United States, and with the recent growth in numbers of available psychopharmacological agents, these physicians may have been better able to detect and treat suicidal persons and to use the local suicide prevention centers as adjuncts in treatment.

It is important to note that suicide prevention centers are often established in the United States in response to high suicide rates in cities. Thus, although the suicide rates may have risen in the cities, it is possible that these rates would have risen more precipitously had the centers not been opened.

Finally, suicide is a rare phenomenon, and there are often relatively large fluctuations in the suicide rates from year to year. Also, suicide rates can be easily affected by minor influences. Thus, a truly adequate study would sample suicide rates from several consecutive years. As more recent data become available, such studies will become possible.

Whatever the reasons for the results of the recent study, we must view with some concern the relative immunity of suicide rates in the United States, despite the efforts of suicide prevention centers to decrease these rates. It may well be that suicide prevention centers do not prevent suicide (*10*).

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