

ABSTRACT

Suicide rates for elderly US residents decreased between 1950 and 1980, but have increased recently. We analyzed suicide mortality trends using national mortality data for the period 1980 through 1986. Suicide rates during this period increased for each 5-year age group over age 65. Elderly White males have the highest suicide rates and experienced a rate increase of 23%. The rate for Black males rose by 42%. Divorced males have the highest age-adjusted sex- and marital status-specific rates, and experienced a rate increase of 38% over the 7-year period. Suicide rates among older US residents vary by region of the country and are highest in the West. Rates increased in all regions except the Northeast. Firearms are the most common method of suicide in the elderly, and firearm use increased during this period from 60% to 66% of all suicides. Given the recent increase in suicide rates for the elderly and the magnitude of the problem in this age group, it is again important to direct our attention to the problem of suicide in the elderly and recognize the need for effective prevention strategies. (*Am J Public Health*. 1991;81:1198-1200)

Suicides among Older United States Residents: Epidemiologic Characteristics and Trends

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Introduction

Suicide rates for elderly US residents decreased between 1950 and 1980,¹ but have increased recently.² Previous studies of suicide among persons of all ages have identified high risk groups including whites, males, widowed or divorced persons, and residents of the western United States.^{1,3,4} In this article we examine recent trends in suicide rates for elderly US residents, with an analysis of risk groups and methods used in suicide.

Methods

Data on suicide deaths for the years 1980 through 1986 are from annual mortality data tapes compiled by the National Center for Health Statistics (NCHS), Centers for Disease Control. Suicides analyzed in this article are deaths among persons over age 65 with external cause-of-death codes E950-E959, according to the International Classification of Diseases, Ninth Revision (ICD-9).

Population data used in the calculation of rates by age, sex, and race are from annual computer data tapes produced by the US Bureau of the Census. Marital status-specific and region-specific rates were calculated using population estimates from Bureau of the Census publications.^{5,6} Marital status-specific rates were age-adjusted by the direct method (10-year age groups), using the 1980 population as the reference. Because of the small numbers of suicides among other racial groups, we limited our analysis of race-specific rates to the Black and White races.

Results

From 1980 through 1986, 36 789 suicides were reported among US residents over age 65 years, and crude annual suicide rates increased for this age group by 21% (from 17.8 to 21.5 per 100 000). Rate increases ranged from 9% (from 16.2 to 17.7 per 100 000) for the 65- through 69-year age group to 38% (from 18.0 to 24.8

per 100 000) for the 80- through 84-year age group (Table 1). During this period, men accounted for 80% of the suicides among persons over age 65, and rates for men increased for each 5-year age group over age 65.

White males had the highest race- and sex-specific suicide rates for persons over age 65 years (Table 2), and from 1980 to 1986 their rate increased 23% (from 37.2 to 45.6 per 100 000). Suicide rates for Black men increased 42% (from 11.4 to 16.2 per 100 000), and the suicide rates for White women increased 17% (from 6.4 to 7.5 per 100 000).

The 1986 suicide rate for divorced males over age 65 was 3.2 times the rate for married men and 18.9 times the rate for married women (Table 3). From 1980 to 1986, the rate for divorced men increased 38% (from 79.5 to 109.7 per 100 000). Rates for women increased, regardless of the marital status category. However, because the numbers are small, the rates fluctuate more.

In 1986, the western United States had the highest suicide rate for persons over age 65 (29.5 per 100 000), the Northeast had the lowest rate (13.6 per 100 000), and the southern and northcentral regions had intermediate rates (23.7 and 20.2 per 100 000, respectively). From 1980 to 1986, the suicide rate decreased slightly in the Northeast, whereas rates increased in the northcentral (22%), western (23%), and southern (29%) regions.

From 1980 to 1986 firearms were the most common method of suicide for both men and women over age 65 years (Figure 1). Over the 7 years, 73% of older men and 29% of older women committed suicide with firearms. Firearm use increased from

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60% of all over-65 suicides in 1980 to 66% in 1986 for both sexes combined.

Discussion

Suicide is the third leading cause of deaths from injury among older US residents, following deaths from falls and from motor vehicle crashes.² From 1980 through 1986, suicide rates increased for each 5-year age group over age 65; the only other age groups that experienced a rate increase of at least 5% over this period were the 60- through 64-year age group (10%) and the 15- through 19-year age group (20%) (NCHS Detailed Mortality Tapes 1980-1986).

Although the demographic groups at high risk for suicide among the elderly are similar to those for all ages combined,^{1,3,4} differences in suicide rates between demographic subgroups have become more pronounced. For example, the rate ratio between men and women in the >85 age group increased from 9.2 to 13, and the rate ratio for the western region compared with the northeast region increased from 1.6 to 2.2. It is noteworthy, however, that from 1980 to 1986 the rate ratio for Whites over age 65 compared with Blacks narrowed, due to the larger increase in suicide rates among Black men.

In 1986, 66% of suicides among the elderly were committed with a firearm, compared with 57% among persons under age 65. Methods of suicide differ more between men and women over age 65 than for other age groups. In 1986, 75% of male victims over age 65 died of gunshot wounds, compared with 61% of male victims under age 65. During the same year, 31% of female victims over age 65 died of gunshot wounds, compared with 41% under age 65 (NCHS Detailed Mortality Tapes 1986). The use of drugs and poisons is a common method of suicide for older women. Not only do methods of suicide have important implications for the care of acutely suicidal persons, but the availability of specific methods as risk factors for suicide merits further study.

Possible limitations of our data should be discussed. Underreporting has been suggested to be a major source of error in the determination of suicide rates.^{4,7} Although the precise extent to which deaths are underreported as suicides is unknown, it is probably a small proportion and should not affect the analysis of trends in suicide rates.^{8,9} The denominator used in the calculation of marital status-specific rates is derived from the current population survey, and ex-

TABLE 1—Numbers of Suicides and Suicide Rates by Sex and Age Group for US Residents over Age 65, 1980-1986^a

Year	Sex	Age Group									
		65-69		70-74		75-79		80-84		>85	
		No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1980	Male	1098	28.1	955	33.2	766	41.3	446	43.3	345	49.9
	Female	324	6.6	253	6.4	175	5.9	90	4.6	85	5.4
	Total	1422	16.2	1208	17.7	941	19.5	536	18.0	430	18.9
1981	Male	1033	26.0	925	31.4	742	38.8	484	46.2	354	50.4
	Female	356	7.2	260	6.4	168	5.5	93	4.7	63	3.8
	Total	1389	15.6	1185	16.9	910	18.4	577	19.1	417	17.7
1982	Male	1129	28.0	1053	34.9	859	43.7	518	48.3	363	50.4
	Female	361	7.2	269	6.5	197	6.3	104	5.2	66	3.8
	Total	1490	16.5	1322	18.5	1056	20.8	622	20.1	429	17.5
1983	Male	1139	27.7	1108	35.9	913	45.2	622	56.7	397	53.7
	Female	370	7.3	307	7.3	210	6.6	126	6.1	92	5.1
	Total	1509	16.4	1415	19.4	1123	21.5	748	23.6	489	19.3
1984	Male	1212	29.1	1239	39.3	939	45.2	614	54.7	390	51.6
	Female	387	7.6	303	7.1	208	6.3	133	6.3	92	4.9
	Total	1599	17.2	1542	20.7	1147	21.4	747	23.0	482	18.4
1985	Male	1236	29.1	1252	39.0	1035	48.5	714	61.9	428	55.4
	Female	345	6.7	312	7.2	247	7.4	130	6.0	89	4.6
	Total	1581	16.8	1564	20.7	1282	23.3	844	25.4	517	19.1
1986	Male	1344	30.7	1368	41.9	1161	52.8	695	58.5	484	61.1
	Female	363	6.9	339	7.7	272	7.9	155	6.9	94	4.7
	Total	1707	17.7	1707	22.3	1433	25.5	850	24.8	578	20.7

^aPer 100 000 population per year.

TABLE 2—Numbers of Suicides and Suicide Rates by Race for US Residents over Age 65, 1980-1986^a

Year	White				Black			
	Male		Female		Male		Female	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1980	3490	37.2	896	6.4	97	11.4	18	1.4
1981	3407	35.7	899	6.3	105	12.1	30	2.3
1982	3786	38.8	961	6.6	108	12.2	23	1.8
1983	4020	40.3	1068	7.2	128	14.1	19	1.4
1984	4233	41.6	1081	7.2	129	14.0	24	1.7
1985	4495	43.2	1059	6.9	143	15.2	38	2.7
1986	4853	45.6	1168	7.5	156	16.2	35	2.4

^aPer 100 000 population per year.

cludes institutionalized persons. Other rates were calculated using census data and intercensal estimates of the resident US population. Although this methodological difference may affect actual rates, any effect on trends in age-adjusted rates should be minimal.

Known risk factors for suicide that may contribute to high rates and to an increase in rates for the elderly include depression, alcoholism, and chronic illness.¹⁰ Although overall rates of depression may be increasing in the

United States,¹¹ this increase would have to be occurring disproportionately among the elderly to explain the prominent and largely isolated increase in suicide rates for this group. We are not aware of such evidence. Alcohol abuse is less prevalent among the elderly than in younger age groups.¹² It is possible, however, that more people with alcohol-related illnesses are living to an older age, resulting in an increase in the prevalence of alcoholism among persons over age 65 and therefore more at-risk people in this age group. Fi-

TABLE 3—Age-Adjusted Suicide Rates by Sex and Marital Status for US Residents over Age 65, 1980–1986^a

Year	Marital Status							
	Married		Never Married		Divorced		Widowed	
	Male	Female	Male	Female	Male	Female	Male	Female
1980	26.9	5.0	61.6	4.9	79.5	10.8	76.5	7.7
1981	27.0	5.3	55.3	5.8	74.7	10.3	69.5	7.3
1982	27.5	5.4	74.6	5.9	99.9	16.7	81.5	7.1
1983	29.9	5.7	69.8	6.8	103.4	13.2	76.5	8.0
1984	31.0	5.6	65.9	7.5	113.6	18.3	81.4	8.2
1985	33.1	5.5	53.5	6.1	101.1	15.0	78.7	8.0
1986	34.5	5.8	53.5	5.9	109.7	18.4	85.9	8.4

^aPer 100 000 population per year.

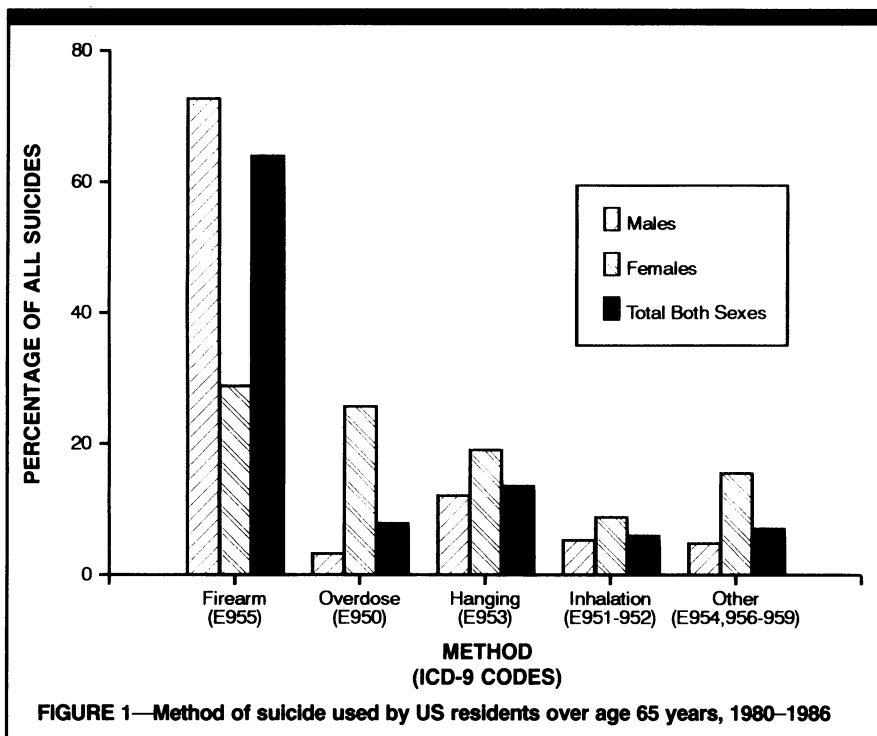


FIGURE 1—Method of suicide used by US residents over age 65 years, 1980–1986

nally, advances in medical care are helping to prolong the lives of persons with chronic illnesses. This could result in higher suicide rates for the elderly, because suicide risk may be higher among chronically ill persons.¹³

Several recommendations can be made based on our findings. We need to consider how current approaches to suicide prevention can better reflect the special circumstances of older persons. Crisis services, for example, may have the greatest impact on the prevention of youth suicide, which may be more impulsive in na-

ture.¹⁴ For older adults, however, addressing the increasingly prevalent problem of social isolation,¹⁵ perhaps reflected in the high suicide rates among divorced persons, may be a more effective prevention strategy. Studies that address the role of economic factors in the precipitation of suicide are needed, as are analytic studies to evaluate, on the individual level, the relationship between correlates of social disruption, such as divorce or geographic migration, and the risk of suicide. Finally, health providers should be increasingly aware of the potential for sui-

cide among the elderly, particularly among those at highest risk, such as divorced older men and Black men. □

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