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## Suicide in United States Army Personnel, 1983-1984

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A fifth biennium of epidemiological data on suicide in the U.S. Army was compiled. The annual crude suicide rate per 100,000 soldiers-at-risk for 1983-1984 was found to be 10.0, a drop of 1.4 points from 1981 to 1982. Sex-specific, race-specific, age-specific, grade-specific, and marital status-specific rates were studied, and these can be compared with the same indices in the previous four biennia. Demographic data and information on circumstances surrounding the suicidal act were also made available for comparison with previous data. Analysis of the suicidal person's psychosocial situation (as reflected in the kinds of personal problems recorded in the reports and investigations of the incident, and as reflected in assessment made of the victims pre-suicidal "motivational state") showed remarkable constancy in the five time periods studied, and indicates a powerful, consistent association between a dyadic love object relationship in total collapse and the completed suicide.

This is the fifth in a series of biennial reports on the epidemiology of suicide in active duty Army personnel.<sup>1-4</sup> By describing all such suicides in depth, these studies provide a unique description of the suicides in a large segment of the young adult population of the United States. Compared to previous reports, this presentation format is compressed, but

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copies of the figures and tables of this biennium's data in the same format as the four previous reports are available from the authors.

### Method

As in the four previous studies, the line of duty (LOD) investigation file on each completed suicide was used as the primary data source. The LOD file was routinely received by the Psychiatry and Neurology Consultant in the Office of the Surgeon General for an opinion on the suicided soldier's mental competency. While the file was under review, selected information from it was extracted and recorded for later coding and data processing.

### Results

From January 1, 1983 to December 31, 1984, a total of 155 soldiers killed themselves intentionally. Using mid-year strength data provided by the Defense Manpower Data Center, the Army annual crude suicide rate for the two-year period was found to be 10.0 cases per 100,000 soldiers-at-risk. In 1983, the suicide incidence was 75 and in 1984 it was 80. These counts produced annual crude rates of 9.8 and 10.3, respectively.

The 155 suicides are categorized by sex and by demographic factors in Table 1, and the corresponding rates are also given. The male-to-female rate ratio is 1.0 to 1. The enlisted-to-officer ratio is 2.1 to 1. The reader is reminded that the small number of female suicides results in unstable rates. The standard deviation of the rate can be estimated from the rate calculated using the square root of the number of cases.

Sex-by-race ratios are as follows: white male to black male, 2.3; white female to black female, 4.6; white male to non-white male, 2.6; white female to non-white female, 5.4.

The average age for male enlisted suicides was 27 (range 18-55) and for female enlisted suicides was 24 (range 20-42). For officers, the average age was 36 with ranges of 28-43 for

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TABLE 1

SUICIDE INCIDENCE AND RATE PER 100,000 IN ACTIVE DUTY ARMY PERSONNEL FOR CALENDAR YEARS 1983 AND 1984 BY DEMOGRAPHIC VARIABLES

	Male		Female		Total	
	Incidence	Rate	Incidence	Rate	Incidence	Rate
Total	140	10.0	15	9.9	155	10.0
Race						
White	116	12.7	13	15.7	129	13.0
Black	21	5.6	2	3.4	23	5.3
Other	3	2.8	0		3	2.6
Age						
17-19	11	7.0	0		11	6.3
20-24	46	8.9	10	14.5	56	9.5
25-29	34	11.6	3	8.0	37	11.2
30-34	23	12.3	0		23	11.2
35-39	12	9.6	0		12	9.1
40-44	10	18.7	1	67.5	11	20.0
45+	4	17.6	1	269.5	5	21.5
Grade						
Enlisted	131	10.8	13	9.8	144	10.8
E1	10	10.1	0		10	9.1
E2	14	14.8	2	19.6	166	15.3
E3	16	8.5	4	15.5	20	9.4
E4	29	9.4	6	12.3	35	9.8
E4	18	8.4	1	3.9	19	8.0
E6	19	11.8	0		19	11.2
E7	18	18.5	0		18	18.1
E8	6	19.7	0		6	19.5
E9	1	12.2	0		1	12.2
Officer	9	4.7	2	10.3	11	5.2
Commis- sioned	8	4.9	2	10.5	10	5.5
Warrant	1	3.4	0		1	3.4

males and 26-46 for females. Most enlisted suicides for males occurred in grade E4 and for females in grade E4.

Age-specific rates for the 1983-1984 Army suicide population were almost uniformly lower than the age-specific rates for the general U.S. population for 1983, obtained from the Mortality Branch of the National Center for Health Statistics. U.S. rates by five-year age and sex groups for 1984 were not available at the time of this writing. Grade-specific rates by sex were calculated by using as denominators the average of the 1983 and 1984 mid-year grade strengths compiled by the Defense Manpower Data Center. The grade with the highest suicide rate was E8 for men and E2 for women.

Table 2 presents marital status distribution for the enlisted soldiers. Approximately half of the suicides were currently married. This proportion is slightly higher than the one-third reported previously.<sup>1-4</sup>

Time of occurrence is shown in Table 3. Suicide was distributed unevenly throughout the days of the week, with the highest value on Sunday and the lowest on Tuesday. The Sunday peak and Tuesday minimum in Army suicides differs from the Monday peak and Friday minimum seen in the average of the prior eight years.<sup>5</sup> The single peaked pattern across the months of the year (November and December) was distinctly different from the June and January peaked pattern of the previous data.<sup>5</sup> The spring and fall peaks found by Mac-

Mahon<sup>6</sup> in the United States Vital Statistics are not found in our data, although the Monday peak is present. There is little apparent consistency in the cyclical properties of suicide when the data from each of the five biennia are examined individually,<sup>1-4</sup> although averaging over a longer span brings the regularities into focus.<sup>5</sup>

The method and place of suicide are tabulated in Table 4. Use of a firearm was again the most common method employed by males and females. The home (including parental home, family quarters, apartment, and barracks) was the site of suicide for 59 per cent of the cases, a finding higher than the 48 per cent in 1981-1982, the 57 per cent in 1979-1980, the 55 per cent in 1977-1978, and the 52 per cent in 1975-1976. In terms of the geographic distribution of the suicide cases, five continental United States (CONUS) stations reported five or more instances of completed suicide in the two-year period: Fort Hood, 11; Knox, 9; Sill, 9; Bragg, 5; and Bliss, 5. CONUS reported a total of 110 suicide deaths (rate of 11.8); Alaska, 1 (rate of 6.3); Hawaii, 5 (rate of 13.7); Europe, 32 (rate of 7.4); and Korea, 7 (rate of 12.4).

In terms of time clusters, at one post (Knox) there was one instance wherein three cases occurred within a 30-day period.

TABLE 2

MARITAL STATUS-SPECIFIC SUICIDE RATES FOR ARMY ACTIVE DUTY ENLISTED PERSONNEL 1983-1984

	Number	Rate
Single	53	8.8
Married	68	10.0
Divorced or separated	23	51.7
Widowed	0	
Total	144	10.8

TABLE 3

SUICIDE INCIDENCE AND RATE PER 100,000 BY DAY OF WEEK AND MONTH OF YEAR, U.S. ARMY 1983-1984

	Incidence	Rate
Month		
JAN	12	9.3
FEB	8	6.2
MAR	12	9.3
APR	12	9.3
MAY	12	9.3
JUN	12	9.3
JUL	15	11.6
AUG	13	10.1
SEP	11	8.5
OCT	12	9.3
NOV	18	14.0
DEC	18	14.0
Day		
SUN	31	14.0
MON	23	10.4
TUE	17	7.7
WED	10	8.6
THU	18	8.1
FRI	26	11.8
SAT	21	9.5

TABLE 4

PLACE WHERE SUICIDE ACT OCCURRED AND METHOD USED TO COMPLETE SUICIDE, U.S. ARMY SUICIDES 1983-1984

	Number	Per cent
<b>Place</b>		
Home/quarters	67	43.2
Barracks	25	16.1
Friend's home*	6	3.9
Motel/hotel	6	3.9
Jail/hospital	2	1.3
Place of duty	3	1.9
On post, other	11	7.1
Off post, other	35	22.6
Total	155	100.0
<b>Method</b>		
Firearm	90	58.1
Hanging, strangulation	31	20.0
Overdose/poison	8	5.2
Gas (CO, other)	11	7.1
Jump	5	3.2
Drowning	2	1.3
Other	8	5.2
Total	155	100.0

\* Including relative's home (not parent).

In Europe there were 10 instances of three cases within a 30 day period. There were three distinct clusters (etiology unknown): 11 suicides within 116 days, 3 suicides within 27 days, and 5 suicides within 49 days.

It was observed that 24 per cent of the 155 victims left a suicide note, 31 per cent of them spoke of or hinted about suicide prior to the act, and 10 per cent had histories of suicide attempts. Twenty-three per cent of the cases had a history of some kind of psychiatric contact—mental health clinic visit, hospitalization, or parapsychiatric counseling. We counted 23 per cent of the 155 cases who had been using alcohol at the time of the final act, and 1 per cent who had been using an illicit drug just before death. These percentages on communication, psychiatric history, and alcohol/drug usage are believed to be conservative representations, since observational data on the presence or absence of these items were not always included in the files reviewed.

Table 5 is a list of stressful problems, with a tally of the number of cases in whom the specific problem was noted to have existed prior to suicide. The percentages are based upon the 131 persons in whom one or more of the problems had been detected and recorded. In 24 of the victims (15 per cent), no motivational explanations or problem definitions could be found in the files searched.

The foremost problem is the one labeled "difficulties with love object." When the nature of the relationship problem in the victim-love object dyad is explored (Table 5), divorce or other dissolution of the relationship is the most frequent manifestation. In 29 per cent of the cases in which a love object problem was noted, reference to a quarrel or altercation just prior to the suicide could be found in the case material.

The taxonomy of suicidal motivation developed previously<sup>1</sup> was used again to categorize cases whenever sufficient information was available. Ninety cases were assigned one of seven

classifications, with the following results: (1) Exposed, caught, humiliated, cornered—6 per cent; (2) Guilty, remorseful, regretful—7 per cent; (3) Rejected, deserted, cut off—25 per cent; (4) Inadequacy, inability, loss of functioning, dislike of self—12 per cent; (5) Intractable pain, hopeless medical condition—3 per cent; (6) Hallucinating, delusional, confused, disoriented—1 per cent; and (7) Angry, resentful—4 per cent.

## Discussion

The annual suicide rate per 100,000 soldiers-at-risk fell 1.4 points from 1981-1982 to 1983-1984. This drop represents a continued downward trend that has been observed since our studies began. In 1975-1976 the annual crude suicide rate was 16.4; in 1977-1978 it was 14.8; in 1979-1980 it was 11.6; in 1981-1982 (with late reports) it was 11.4; and in 1983-1984 it was 10.0. We lack a completely satisfactory explanation for this observed trend, but in this connection we would point out the demographic shift in active duty Army personnel that has occurred during the period we have been studying soldier suicide.

In 1975-1976 the ratio of white soldiers to black soldiers in the active U.S. Army was 3.7; in 1983-1984, it was 2.3. This constitutes a drop of over one-third in the white:black soldier population ratio in 10 years. Also, we know that the suicide rate for black soldiers is considerably lower than it is for white soldiers. The relative risk for white male suicides over black male suicides is 2.3, and the relative risk for white female soldiers over black female soldiers ranged from 4.7 to 6.3 in the five biennia studied.

The suicide rate per 100,000 women in the Army dropped from 15.2 in 1977-1978 to 9.9, a figure approximately the same as the male rate, in 1983-1984. The reduction of one-third over the six years brings the suicide rate to a value not

TABLE 5

NUMBER AND PERCENTAGE OF SUICIDES IN WHOM CERTAIN SPECIFIC STRESSFUL PROBLEMS WERE NOTED TO HAVE EXISTED PRIOR TO SUICIDE, U.S. ARMY SUICIDES 1983-1984

Existent Problem	Number	Per cent*
Difficulties with love object	91	69.5
Recent or pending divorce, separation, or breakup	49	37.4
Marital problems/"can't get along"	27	20.6
Altercation with love object just before suicide	26	19.8
Infidelity an issue	14	10.7
History of violence in the relationship	3	2.3
Murdered love object at time of suicide	8	6.1
Attempted to murder love object but failed	1	0.8
Difficulties with job/work/Army	49	37.4
AWOL/desertion at time of suicide	10	7.6
In trouble with law (other than AWOL)	10	7.6
Financial problems	18	13.7
Suffering from a psychosis	1	0.8
Medical/health problems (other than psychiatric)	8	6.1
Death of a loved one	4	3.1
Alleged sexual deviation	4	3.1

\* Percentages are based on an N of 131, i.e., the number of persons with one or more detected stressful problems, or on an N of 91, i.e., the number of persons with one or more detected love object problems.



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dissimilar from that of equivalent civilian females. We wonder whether efforts to improve the status of women in the Army played a role in this reduction but we lack data to test this hypothesis. The small number of females in the Army limits the interpretation of trends because of the statistical instability associated with rates computed from small numbers of suicides.

There were only two female officer suicides and two black female suicides in 1983-1984. The mean age of enlisted suicides was higher than it had been in the four previous biennia for males and rose from the 1981-1982 value of 20.9 to 24.3 in 1983-1984, which was closer to the 23.7 recorded in 1979-1980 for females. The mean age of male officer suicides, 35.6, was similar to what was found in 1981-1982, 34.1, and in 1979-1980, 35.2. The relative risk of enlisted suicides to officer suicides was 2.1 compared to previous values of 1.6, 3.1, 1.7, and 1.8.

Age-specific rates for the Army male suicides were lower, at all age levels studied, than the comparable rates for the general U.S. male population—a finding that has now established itself five times. However, Army suicide rates for women are erratic and not consistently lower.

The highest grade-specific risk for suicide occurs at grades E7/E8 and grade E2. Grade E2 is typically attained after three months in service and is held for another three months. The grade of E2 falls in the period of advanced training between the completion of basic training (the first two months of service) and the start of the soldier's duty assignment. This period is a time of transition, with the anticipation of pass/fail training assessments, and imminent relocation with attendant separations and disrupted personal relationships. Grades E7/E8 are typically the culmination of an enlisted career, and these suicides appear to be related to the anticipated life changes at the completion of service. In some cases it was not the pending retirement itself but a threatened bar to reenlistment which would prevent completion of the pension-qualifying 20 years of service. The hypothesis that this psychosocial stress of transition is the "cause" of the individual suicides follows, but the LOD file does not contain the information to allow a test of the hypothesis.

The data having to do with note-leaving, communicating intent, history of attempts and psychiatric contact, and using alcohol or drugs at the time of suicide were similar to the percentages obtained in the four previous biennia. The place where the act occurred was also similar. Time indicators—day of the week and month of the year—show little consistency

from one two-year period to the next. When averaged over longer time periods, the day of the week variation is similar to the pattern for the U.S. civilian data. The marital status-specific rates show that divorced or separated soldiers have a six times higher suicide rate compared to never-married, single soldiers and a relative risk of five compared to married soldiers. As was reported previously,<sup>4</sup> our data again demonstrate that the impending Army suicide is most likely to be in the throes of a relationship problem with his or her spouse or lover, producing a compelling feeling of rejection or isolation from the other party in the dyad.

### Summary

A fifth biennium of epidemiological data on suicide in the United States Army was compiled with the same method as was used previously.<sup>1-4</sup> The annual crude suicide rate per 100,000 soldiers-at-risk for 1983-1984 was found to be 10.0, a drop of over one point from where it stood in 1980-1981.

Sex-specific, race-specific, age-specific, grade-specific, and marital status-specific rates were studied and can be compared with the same indices in the previous four biennia. Demographic data and information on circumstances surrounding the suicidal act were also made available for comparison with previous data.

Analysis of the suicided person's psychosocial situation (as reflected in the kinds of personal problems recorded in the reports and investigations of the incident and as reflected in assessments made of the victim's pre-suicidal "motivational state") showed remarkable consistency in the five time periods studied and, as stated in previous reports, points unflinchingly to a love object dyadic relationship at total collapse.

### References

1. Dattel WE, Johnson AW, Jr: Suicide in United States Army personnel, 1975-76. *Milit Med* 144:239-244, 1979
2. Dattel WE, Jones FD, Esposito ME: Suicide in United States Army personnel, 1977-78. *Milit Med* 146:387-392, 1981
3. Dattel WE, Jones FD: Suicide in United States Army personnel, 1979-1980. *Milit Med* 147:843-847, 1982
4. Rothberg JM, Rock NL, Jones FD: Suicide in United States Army personnel, 1981-1982. *Milit Med* 149:537-541, 1984
5. Rothberg JM, Jones FD: Suicide in the US Army: epidemiologic and periodic aspects. *Suicide Life Threat Behav* 17:39-45, 1987
6. MacMahon K: Temporal cycles in the frequency of suicide, United States, 1972-1978. *Am J Epidemiol* 117:744-750, 1983

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