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Suicidal Admissions in the United States Military

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Suicide is currently the second leading cause of death in the U.S. military. Little recent research has been done on a well-defined cohort at high risk for death by suicide, which consist of military patients who attempt suicide or are admitted for suicidal ideation. As a pilot investigation based on a literature review of suicidal behavior in the U.S. military, 100 consecutive charts of suicidal patients at a tertiary military treatment facility were reviewed. The findings included the following: 94% were admitted with a depressed mood; 67% had a history of previous attempts or gestures; 49% had been treated with psychiatric medication prior to admission and 88% were treated with psychiatric medications while on the ward; 47% returned to a full duty status; 29% were recommended for administrative separation; and 18% were recommended for a medical board. Suggestions for future research are presented to help improve our suicide prevention programs.

Introduction

Suicides and suicide attempts are a significant source of morbidity and mortality in the U.S. military. Suicide is usually the second most common cause of death in the U.S. military after accidents. In 2000, approximately 153 active duty U.S. military members killed themselves: 24 were in the Marines, 30 were in the Air Force, 43 were in the Navy, and 56 were in the Army. These numbers do not reflect reserve members or undetermined deaths. That translates to a suicide rate of approximately 11 per 100,000.

The military has gathered data on completed death by suicide for years. As early as 1984, the U.S. Army was collecting such data in an effort to develop a suicide prevention program (Robert Thomas, personal communication). However, the data collected have often been incomplete. The Army has performed psychological autopsies on completed suicides for many years; however, in only half of the suicides was a report available for statistical analyses. The other services have had an even smaller proportion of investigations done on completed suicides.[1,2] However, the literature on suicide deaths is fairly robust and is not reviewed here. (Selected references are available from the author on request.)

Far less comprehensive information has been collected on suicide attempts and suicidal ideation. There are no reliable current figures on the suicide attempt rate in the military. There is considerable difficulty collecting that data, partly because of underreporting and privacy concerns on the part of the providers and patients. However, the Air Force has recently developed a form for collecting data and reporting suicide attempts, but that information is currently Air Force specific to those facilities.[3]

The relationship among those who think about suicide, those who attempt it, and those who kill themselves is not completely understood. The literature shows that a previous suicide attempt is a strong risk factor for completed suicide at a future date.[4-8] Previous suicide attempters have an average completion rate of approximately 1% per year, and the possibility of completing suicide is especially high in the first year or two after the initial nonfatal suicide attempt.[4] The lifetime risk for suicide after a nonfatal suicide attempt is 15%.[8]

Some service members who try to kill themselves are retained on active duty, and some are either administratively separated or medically boarded. Variability stems both from psychiatric history, the lethality of the attempt, and the military and political circumstances at the time.

This article first reviews the literature on service members who attempt suicide in the U.S. military and (where recorded) what was the disposition of those members. During the review of the literature, one must take into account both the year and any

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existing military conflict. Suicide attempts in the military frequently represent manipulative behavior to avoid combat or simply to go home. Whether these behaviors are handled through medical or legal channels often depends on whether the nation is at war or peace.[9]

One reason to gather this information is that questions about stresses and support systems may be asked of the living, while this information may not be able to be determined if the suicide attempt was successful. The information obtained could then be used to help guide our suicide prevention programs

Review of Military Literature about Suicidal Behavior in the U.S. Military

In a 1954 study of 20 consecutive admissions for suicidal attempts and gestures at the Fort Knox U.S. Army Hospital, Finn[10] found them all to be cases of character and behavior disorder. They were described as having personality factors of impulsivity, strong maternal ties, weak male identification, poor heterosexual adjustment, and poor empathy with people.

In a study of 114 patients admitted to the Philadelphia U.S. Naval Hospital, published in 1954, Fisch[11] was "struck by the transparent insincerity of many of these cases" and observed that in only 27 of the 114 did there "seem to be any likelihood of genuine suicidal intent."

In a study that included 104 cases of attempted suicide randomly selected during 1956 to 1957 from Army-wide Surgeon General's referrals, Yessler et al.[12] in 1960 saw no difference in the proportion of communicators (those who related their intention prior to the act) in suicide attempts (25%) as compared with completed suicides (30%). Only 17% were potentially serious. The most frequent age range was 20 to 24 years. Thirty-five percent were intoxicated at the time of the attempt, 41% were "in trouble" attempts, and 7% left a note.

In a study of suicidal admissions at Letterman General Hospital from 1957 through 1966, Hauschild[13] reported an average age of 25 years. He recorded 17% as having a previous suicidal attempt, 10% previously diagnosed with schizophrenia, 62% diagnosed with character and behavior disorder, 13% diagnosed with situational problems, and less than 1% diagnosed with alcoholism. A total of 44% of these active duty patients returned to duty. Ninety-eight percent of those with situational problems returned, but only 30% of those with character/behavioral disorders returned.

Men hospitalized for suicide attempts from 1962 to 1963 in San Diego and Oakland, California were described as having an attempted suicide rate of 52 per 100,000, with one-half being returned to duty.[14]

In an incidence study at Fort Dix and the adjacent McGuire Air Force Base in the latter half of 1968, Sawyer[15] found an annual rate of 9.1 per 1,000 prevalence for "any self-inflicted injury or risk-taking behavior regarded by the individual, the referring source or the psychiatrist as having a suicidal implication." Of the 179 cases reviewed, the author describes the vast majority of the acts as superficial or insincere. The average age was 20, 96% of the cases were men, 91% were Caucasian, 79% were single, and 86% were in rank E-1 or E-2. A total of 98% of these cases were diagnosed as situational. Eighty-eight percent returned to duty without psychiatric hospitalization. An additional 8% returned to duty within 1 week. Only 4% required prolonged hospitalization.

A 1969 study of 117 gestures at Fort Leonard Wood, Missouri found an annual rate of 672 per 100,000. All were either character and behavior disorders or acute situational disturbances. Only two cases required hospitalization. The dispositions were that 29% were separated and 64% returned to duty with 7% lost to follow-up as absent without official leave or desertion.[16] In a 1975 study of 83 Navy men and 60 Marine Corps men, Spaulding and Edwards[17] reported the disposition of the cases to be 6% separation with the remainder returning to duty with or without treatment or management. (These numbers may have reflected the ongoing Vietnam War.)

In an unpublished 1976 analysis, the third author of this article calculated the suicide attempt rate based on hospital dispositions recorded as intentionally self-inflicted injuries for the active duty army worldwide. The rate was 85.3, 87.7, and 90.6 per 100,000 in 1971, 1972, and 1973, respectively. The return to duty rate averaged 78% over the 3-year span.

In a report of the 52 suicide attempts from the Marine Corps Recruit Depot San Diego, California in June through September 1978, Wasileski and Kelly[18] reported a rate of 574 per 100,000. Most of the reported reasons for the attempts included a desire to effect immediate discharge.

In a 1980 report of 30 basic trainees at Lackland Air Force Base who made a suicide gesture, Gaines and Richmond[19] reported all subjects but one were rated as having made a "very minimal or trivial" gesture with almost no possibility for serious harm. The suicidal behavior of the subjects in the suicide group (compared with a control group) was more closely related to depression and feelings of inadequacy than to characterological traits. Gaines and Richmond[19] wondered whether the diagnosis, treatment, and disposition of the suicidal patient is based on the patient's clinical condition or some "desire to be rid of the patient."

In an unpublished analysis of 692 consecutive admissions to the Psychiatry Service of the Walter Reed Army Medical Center (WRAMC) in 1983–1984, Dr. Daniel G. Amen found that 223 had significant suicidal behavior or ideas leading to admission. The assessment of the treating psychiatrists was that 69% of the self-destructive behaviors were manipulative in intent.

In a 1987–1988 report at a Norfolk Training Command, McDaniel et al.[20] gave the mean incidence of suicide attempts as 9.4 per 10,000 per month in the training command, an annual equivalent of 1,128 per 100,000. The introduction of the suicide prevention and stress management classes midway through the time interval coincided with a significant reduction in the number of suicide attempts.

In a 1988 review of hospital dispositions recorded as intentionally self-inflicted injuries, Rock[1] reported rates of 84 per 100,000 for 1975 and 1976, rising to 170 per 100,000 in 1980, falling to 112 per 100,000 in 1982, and rising again to 130 per 100,000 in 1984.

In a report of "parasuicidal" experience on a training post in Virginia from 1989 to 1991, Koshes reported an average annual hospitalization rate of 52 per 1,000. This was coincident with the outbreak of the Persian Gulf War. The 54 cases were all

diagnosed as adjustment disorders with a disposition of 24% return to duty and 76% separation.[21]

A recent Air Force study looked at 14 aviators who attempted suicide. Common stressors included failed intimate interpersonal relationships, administrative or legal problems, psychiatric disorders, the death of a spouse, and job conflicts. Of these, 11 (79%) ultimately returned to flying status.[22]

Method

This study was a records review conducted at Walter Reed Army Medical Center of 100 consecutive cases admitted to inpatient psychiatry between July 1998 and January 1999. A case was included in the study if the patient was hospitalized for suicidal ideation or for a suicide attempt either as a reason for admission or at some point in the hospitalization period. The cases were all active duty Army, Navy, Marine Corps, Air Force, Coast Guard, or Public Health Service members. These cases included patients from the local area, the east coast of the United States, as well as patients medically evacuated by air from various points around the world (to include Europe, Asia, and the Middle East). In general, patients evacuated by air to WRAMC had more serious diagnoses and were referred for final disposition, i.e., a medical board or administrative separation.

Data points collected for this study included: demographic information; motive for suicidal ideation; stresses prior to suicidal behavior; support systems used; signs/symptoms of psychiatric illness; medications used prior to admission and during admission; previous psychiatric history to include previous suicidal activity; personal habits (drugs, tobacco, and alcohol) to include level of intoxication at the time of the suicidal activity; psychiatric diagnosis; hospital course (length of stay, behavior on the ward, overall improvement during hospitalization); and final outcome to include ultimate military disposition.

The data from the charts reviewed were entered electronically via the new electronic inpatient chart. Many of the data elements were required fields, such as demographic information, and nearly 100% of the cases yielded information. Some other data fields were not required, such as unit support, and therefore the information is less complete.

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) software. A number of statistical tests were preformed to include frequency, cross-tabulations, and χ^2. The protocol was approved by the Department of Clinical Investigations at WRAMC.

Results

Of the 100 charts, 54 of these patients were admitted following an attempted suicide, whereas the remaining 46 service members were admitted after voicing significant suicidal ideation. Sixty-six patients were men (46 Caucasian, 17 African American, 3 Asian, 2 Hispanic, and 1 "Other"), and 34 patients were women (16 African American, 15 Caucasian, 2 Asian, and 1 Hispanic). Of the 54 patients that attempted suicide, 20 were women and 34 were men.

The age of the patients ranged from 19 to 46 years, with an average age of 27.6 years. Of our patients, 58% were either single, separated, divorced, or widowed. The distribution of cases by service (39% Army, 29% Navy, 16% Air Force, 14% Marine Corps, and 2% Coast Guard/United States Public Health Service) was not different from the distribution of personnel in the Department of Defense ($\chi^2 = 4.1$, $p = 25$, not significant). The representative nature of our study sample is seen in Table I, which compares our sample subjects to the population of the Department of Defense.

The vast majority of cases were enlisted personal (91%) with 69.2% in the ranks E-3 through E-5. The length of active duty service for the cohort ranged from less than 2 months to more than 26 years. Of the cases, 60.4% were within the first 4 years of service (the typical first enlistment period). There was a wide variety of military occupational specialty and unit of origin. Of the patients, 31% in the study had been air evacuated to WRAMC from various units outside the continental Unites States and within continental Unites States, and the remaining 69% were from various local commands.

At the time of admission, 94% of the patients in this study subjectively reported depressed mood. The clinical presentations of this depressed mood were: suicidal ideation (100%), insomnia (88%), anhedonia (86%), poor energy (87%), poor concentration (87%), decreased appetite (75%), and anxiety (54%).

TABLE I

CHARACTERISTICS OF STUDY SAMPLE AND DEPARTMENT OF DEFENSE POPULATION

Characteristics	Study Sample (%)	Department of Defense (%)[a]
Branch of service (NS)[b]		
Army	39	32
Navy	29	29
Air Force	16	28
Marine Corps	14	11
Coast Guard/United States Public Health Service	2	—
Rank (NS)		
Enlisted	83	84
Officer	17	16
Missing	4	—
Length of service (years) ($p = 0.003$)		
0–3.9	57	33
4.0–9.9	22	29
10+	21	38
Sex ($p = 0.0004$)		
Male	66	88
Female	34	12
Age (years) (NS)		
≤20	10	12
21–25	40	32
26–34	32	33
≥35	18	23
Race ($p = 0.01$)		
Caucasian	61	68
African American	33	17
Hispanic	2	9
Asian/Other	4	7
Marital status ($p = 0.016$)		
Married	42	60
Single/divorced/separated	58	40

[a] Department of Defense data from the Defense Manpower Data Center web site for 1995.

[b] Probability that the sample is the same as the population, by χ^2 test; NS, no significant difference.

Discharge diagnoses were as followed: 37% adjustment disorder, 24% personality disorder, 12% major depressive episode, 5% bipolar disorder, and 27% other diagnoses.

For those 54 patients that attempted suicide prior to admission, 63% overdosed on prescription and/or over-the-counter medications, 24% cut their wrist(s), 7% attempted hanging, and 13% tried another method. Only 17% were reported intoxicated at the time of the attempt.

Motives for suicidal behavior included: family problems (32%); dissatisfaction with the military (27%); other occupational problems (28%); failed romantic relationships (17%); and legal problems, including Uniformed Code of Military Justice and civil matters (11%).

The precipitating stresses prior to hospitalization were: 78% occupational, 61% marital or romantic, 35% deployment related, 39% financial, and 33% other. As endorsed by our cases, the supports used to cope with the stress prior to admission were: family (89%), mental health services (48%), friends (80%), and the military unit (63%). These supports were reported as adequate in 57%, partially adequate in 37%, and inadequate in 7% of the suicide attempts.

Sixty-four percent reported a history of previous suicide attempts or gestures previous to the index attempt. Prior to this hospitalization, 49% of the patients had been prescribed psychotropic medications.

While on the psychiatric ward, 88% were treated with medications: 32% were medicated with a selective serotonin reuptake inhibitor, and 46% received other medications (to include buproprion, venlafaxine, typical and atypical neuroleptics, mood stabilizers, and benzodiazepines). None of the patients were treated with monoamine oxidase inhibitor antidepressants, and only one patient received tricyclic antidepressants.

Of the 100 patients, 47% were returned to a full duty status and 29% were returned to duty with a medical recommendation for administrative separation. Of those recommended for administrative separation, 75.9% had a personality disorder and the remaining 24.1% met criteria for other administrative separation. Eighteen percent of these patients had a medical evaluation board initiated on the inpatient service. The remaining 6% left active duty via another avenue, to include resignation, end of enlistment, and retirement. Their median length of stay was 5 days. There were no significant differences in the return to duty rate by race or gender.

Of the 64 patients that were admitted for the first time during our study period, 55.6% returned to full duty. For the 26 patients who had been admitted one or more times prior to our study, only 33.3% returned to a full duty status. Of those not returned to full duty, increasing numbers of psychiatric admissions resulted in increasing numbers of medical boards and fewer administrative separations. Of those in our study without prior admission, 28.6% were administratively separated and 9.5% received Medical Evaluation Board, whereas only 25% of those separated after a second or more admission left administratively and 33.3% received a board.

Cross-tabulations and χ^2 tests were also performed for all of the different variables. They revealed very few significant differences, probably because of the relatively small number of patients in each cell.

Discussion

Analysis of the data collected from this cohort of 100 active duty military members suggests that the average suicidal admission to inpatient psychiatry at WRAMC (during the period of this study) was a 22-year-old, unmarried, Caucasian, junior enlisted man who had not completed his first service obligation. However, this information is not particularly helpful because this demographic is also typical of the typical military service member.

Women were represented at a higher rate than their prevalence in the military population: 34% of our patients were women, whereas 14% of the military at that time was comprised of women. This is not surprising because women traditionally have a higher suicide attempt rate than men. Sixteen of those women were African American. However, because WRAMC is in Washington, DC, a city with a predominantly African American population, this data should be interpreted with caution, as service members may have been preferably evacuated there to be closer to their families. (We could not verify this from the chart review.)

The data further suggest that this individual typically grows suicidal in the context of recent problems with a romantic involvement that could have contributed to his inability to cope with family problems, dissatisfaction with military service in general, or his work environment specifically. These data are consistent with similar information reported in most of the various studies of suicidal active duty service members. Furthermore, this demographic information is also consistent with that reported in numerous studies of completed suicides in all branches of the armed forces (full references are available upon request).

However, stresses alone were not sufficient—94% of our patients reported a depressed mood and had many symptoms of depression. Forty-nine percent were diagnosed with a depressive disorder, either an adjustment disorder or major depression and 88% were treated on the ward with medication. The percentage treated with medication was much higher than all of the older studies, reflecting the increased tolerance and safety of antidepressant medications.

For those patients in our study that were admitted after an attempted suicide, 62.3% overdosed and 21.7% lacerated their wrist(s). (Data were not available on amount of medication consumed in overdose or seriousness of injury resulting from intentional wrist laceration.) Despite this, the collected data show that in the majority of our cases, the large majority of the patients avoided significantly lethal means. This is consistent with most of the previous studies that found the majority of patients to be "insincere" in their conviction and "superficial" in their attempt. Obviously this is in contrast to the reports of completed suicides, in which all attempts were (by definition) lethal, often because of the use of firearms.

Two-thirds of our patients had a history of previous attempts or gestures. More than 50% had some contact with mental health services prior to admission, 41.4% had one previous suicide attempt, 23.2% had two or more previous attempts, and 28% had one or more prior hospitalization during their lifetime.

As previously mentioned, prior admissions, suicide attempts, and a history of psychotropic medication used before arrival at WRAMC decreased the probability of the patient being returned

to their military unit. Of those who arrived at WRAMC without being previously medicated with psychotropic drugs, 52% were ultimately returned to duty whereas only 36% of our cases with a history of prior psychotropic medication were returned to duty. These data were consistent with similar disposition data from all the reviewed studies. Service members with acute, situational emotional decompensation were stabilized and returned to duty, those with more serious, protracted mental illnesses were medically boarded, and those with significant personality disorders were recommended for administrative separation.

Part of the motivation for beginning this project was to attempt to understand the manipulative versus the serious nature of the motivation for the attempt and to correlate that with the return to duty rate. Unfortunately those data could not be gleaned from these charts.

Conclusion

Our study was designed to review previously reported data on suicidal active duty military members and compare the findings with a retrospective chart review of 100 suicidal active duty patients admitted to WRAMC from August 1998 through January 1999. Analysis of the demographic data from our study was consistent with that from the previous studies, lending additional credence to the suspicion that young, single, junior, Caucasian, enlisted personnel are at continued high risk for suicidal behavior in the U.S. armed forces. However, women are at a relatively higher risk than men for suicide attempts, which is consistent with the civilian literature.

Two-thirds of our patients had a history of suicide attempts or gestures, and almost one-half had already been treated with psychiatric medication. Unsurprisingly, patients who had previous treatment were less likely to return to duty. Disposition of the patients in this study was similar to that of the patients in previous studies.

The data do not reveal when these previous attempts occurred, but it implies that the military is unknowingly accepting more members into the service with psychiatric histories and attempting to maintain them on active duty. There are ongoing efforts by the services to better screen recruits prior to accession for a history of mental health contacts.

Of the data collected in this study, what differed most from the data from previous studies was diagnoses and comorbidity. This study showed the patient's diagnoses to be mostly adjustment disorders, followed by personality disorder and mood disorders. Similar data from previous studies varied widely from almost universal adjustment reactions to universal character issues. The reason for this is likely multifactorial, including the different times and conflicts, patient populations studied (basic recruit commands, advanced individual training commands, and a tertiary care center), and the ever-evolving psychiatric diagnostic criteria.

This should be only considered as a preliminary study because the hospitalized population at a tertiary care facility like WRAMC is not necessarily typical of the military, and our database consisted of only 100 patients. We were unable to determine from the charts the outcome of patients with more manipulative gestures as compared with those with serious intent to die. Long-term follow up, both with military patients and patients after they leave the military, is needed to ascertain the long-term mortality.

In many ways, the research raises more questions than it answers, such as: are there better ways to screen recruits; what factors are effective in our suicide prevention programs; does initiating and maintaining service members on antidepressants decrease their risk of suicide attempts and completions; and are the current disposition systems (return to duty versus administrative separations versus medical boards) fair and adequate? We would argue for a centralized, confidential database on both completed suicides and suicide attempts to help answer these questions. It is hoped that this study will spur further research into factors surrounding suicidal behavior in the U.S. military.

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