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Wartime Military Service and Utilization of VA Health Care Services

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This study sought to examine predisposing, enabling, and illness characteristics associated with use of Department of Veterans Affairs (VA) health care services. In view of VA's unique mission to care for war veterans, special attention was given to features of wartime military service as predisposing factors for VA health care use. Data from a 1987 national survey of veterans were used to compare VA users and non-users. Logistic regression analysis was used to identify specific variables independently associated with VA health service use. Among current VA health service users, 55% served in combat and 71% in a war zone. Multivariate analysis showed that high illness level, service-connected disability status, and lack of health insurance are the strongest predictors of VA service use. Significant associations were also found between military service during a wartime era, in a war zone, and in combat, and VA health service utilization. Although no differences were noted in VA health service use between veterans of different wartime eras, it was notable that among Korean War-era veterans alone, war zone and combat exposure were not associated with increased VA health service use, perhaps reflecting the more limited public attention that has been paid to veterans of that war. Veterans with war-related military experience show a distinct affinity for VA services.

The Department of Veterans Affairs (VA) health care system has been the subject of increasing controversy in recent years. With the decline in the veteran population, which began in the 1970s,[1] and the advent of Medicare and Medicaid, which established alternative sources of federal assistance for elderly and medically indigent veterans, a growing chorus of critics has questioned the need for a separate veterans health care system.[2-4] While acknowledging the nation's continued obligation to those injured in combat, these critics have questioned the special entitlement of the larger veteran population, pointing out that only 5%-10% of all veterans use VA health care services each year and that only one-third of those who use VA services suffer from disabilities related to their military service (i.e. service-connected veterans). As a result of efforts to reduce federal health care spending, and also perhaps in response to a decline in public favor for VA health care, funding for the system has not kept up with inflation, and services provided have been reduced.[5]

Recent U.S. involvement in Operation Desert Storm (ODS) raises new issues in the debate about the future of VA health care because it marks the emergence of a new generation of wartime veterans. At least 2.2 million military personnel were on active duty at time ODS was initiated,[1] and at least 540,000 served in the Persian Gulf region.[6] If the health care entitlement of this and possible future generations of war veterans are to be addressed by current VA medical centers, these institutions may need to expand and to upgrade their equipment and facilities.

Reduced Eligibility for VA Services

Since the 16th century, governments have recognized their responsibility to care for soldiers injured or disabled in war.[7] The VA health care system grew to its current size to accommodate various extensions of eligibility that reached beyond those injured in combat to the much larger group of veterans who, although not disabled in the course of their military service, either lacked resources with which to obtain health care services or were at leat 65 years old.[8] For 18 years after the conclusion of the Vietnam conflict, however, the U.S. did not participate in a major war, and the VA health care system (like many others) experienced a contraction in its service capacity.[5] As a result of both VA administrative policies[9] and Congressional legislation (Veterans Health Care Amendments of 1986; Public Law 99-272), eligibility of non-service-connected veterans is now limited to those who served for at least 24 months and who earn less than $18,000 per year. If the VA system, faced with budgetary limitations and eligibility restrictions, is to serve veterans of the ODS and future eras as it has served veterans of previous wartime eras, Congressional authority and increased resources may be required.

Wartime Experience and Use of VA Services

In this study, we examine the influence of various veteran characteristics on use of VA services. Since veterans who served after August 3, 1990, will be distinguished from other Post-Vietnam veterans by their service in a wartime era and, for some, by their service in a war zone and in combat, we will pay special attention to the relationship of war-related variables to VA health care utilization. Since these aspects of wartime service are not, in themselves, associated with either eligibility for, or priority access to VA health services, their influence is presumed to be mediated psychologically, i.e., through a positive or negative affinity toward the VA or, more generally, toward groups and organizations connected with their wartime experiences.[10]

Previous studies of VA health care have shown that service-connected disability status, lack of health insurance, and low income were predictive of VA health service use.[11-13] These studies, however, were based on data collected in 1978 and 1979, and they did not address the influence of military service variables. Using more recent data from a 1987 national survey of over 9,000 veterans, this study explores the association of an

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expanded set of veteran characteristics with VA health service use, including service during a wartime era, service in a war zone, and exposure to combat.

Predisposing, Enabling, and Illness Factors in Health Service Utilization

A widely accepted conceptual framework for the study of health service utilization[14] distinguishes the influence of predisposing, enabling, and illness factors. Predisposing factors are personal characteristics, existing prior to the onset of illness, that influence the use of health care services (e.g., socio-demographic or cultural characteristics). Enabling factors are the financial and/or insurance resources needed to obtain health care services. Illness factors are the perceived health problems that provide the immediate impetus toward the use of health services.

This paper will address all three of these factors but will pay special attention to military service variables as predisposing factors for VA health service use. First, we hypothesize that, because of the nurturance and personal support inherent in health care services, after other factors are taken into account, veterans who served in a wartime era, in a war zone, and/or in combat will show greater use of VA health care services than other veterans. Second, we hypothesize that utilization of VA health services will differ among combat veterans of different wartime eras because of differences in public attitudes toward the wars in which they fought. More specifically, we expect that, as a consequence of their feelings of alienation from the government,[15] Vietnam era veterans and Vietnam combat veterans, in particular, are less likely than other veterans to use VA services.

Methods

The Sample

The Third Survey of Veterans (SOV-III) was conducted on a representative national sample of non-institutionalized veterans who had participated in the Census Bureau's national Current Population Survey (CPS),[9] conducted monthly. Veterans living in households being rotated out of the CPS were invited to participate in SOV-III, and 9,442 veterans (83% of those eligible) completed interviews during the summer of 1987. Data from participants in the survey were weighted, using weights established for the national CPS, to establish national population estimates (see reference 9 for further details of survey procedures). This study focuses on male veterans who served between the beginning of the World War II era (September 16, 1940) and September 1980. Veterans who served after 1980 were excluded so as to reduce the confounding influence of the length of time since discharge from the military on the use of VA services and benefits.

Measures

Predisposing socio-demographic characteristics available for study include age, ethnicity, educational level at time of service entry, employment, and marital status.

Predisposing military service characteristics included whether the veteran served in any of three wartime eras: World War II (September 16, 1940–July 25, 1947), the Korean conflict (June 27, 1950–January 31, 1955), or the Vietnam conflict (August 5, 1964–May 7, 1975) and whether he either served in a war zone or was exposed to combat. Two additional military service variables were whether the veteran was drafted or enlisted, and the overall duration of military service.

Enabling characteristics include service-connected status (which entails both financial compensation and priority access to VA health services), non-VA health insurance coverage, and income. Illness characteristics were assessed by three questions: (1) "Compared to other people your age would you say your health is excellent, very good, good, fair, or poor?" (2) "Do you have a disability or health condition that keeps you from working at all?" (3) "Have you ever had psychiatric problems, alcohol problems or drug abuse?"

Service use was addressed by a series of questions that assessed use of both VA and non-VA inpatient and outpatient health care services during the previous year and during the veteran's lifetime.

Analyses

Univariate descriptive statistics were used to compare previous-year and lifetime use of VA services among veterans with various predisposing, enabling, and illness level characteristics. Simultaneous logistic regression analyses were then conducted to determine the independent influence of these characteristics on use of VA services with other characteristics statistically controlled. Since analysis of previous year and lifetime use yielded similar results, only results for the previous year will be presented here. Adjusted odds ratios were computed by exponentiating logistic parameter estimates. These odds ratios reflect the likelihood of VA service use in the presence of each characteristic, with other characteristics statistically controlled. For non-dichotomous independent variables (e.g., age, pre-service educational level, or years of military service), odds ratios represent the increased likelihood of VA service use for each unit increase in the level of the independent variable. Partial correlation coefficients (r) are also presented, indicating the amount of variance in the dependent variable that is explained by the independent variable after other variables are statistically controlled. The rank order of these partial r's, for each analysis, is presented to facilitate identification of those characteristics that have the strongest influence on VA health service use.

Service in any wartime era (none vs. World War II, Korea, or Vietnam) was dummy coded (0,1) in these multivariate analyses. Two composite indexes were also used: a War Zone/Combat Index (1 = no war zone service; 2 = war zone service without combat exposure; 3 = combat exposure) and a 7-point Illness Index composed of the sum of the health status scale (range 1–5) plus dummy coded (0,1) responses to the questions concerning vocational disability and mental health problems.

To compare the relative use of VA services during the previous year among veterans of different wartime eras (World War II, Vietnam, Korea, and those who served in multiple war eras), another logistic regression analysis was conducted. Veterans who served in multiple war eras were combined into a single group because they could not be uniquely classified in any one era. For this analysis, service in the Korean and Vietnam eras and in multiple war eras was coded using dummy (0,1) variables, with World War II service as the reference condition.

Finally, separate logistic regression analyses were used to determine the specific relationship between the War Zone/Combat Index and VA service use for veterans of World War II, the Korea conflict, the Vietnam conflict, and for those who served in multiple war eras (after other predisposing, enabling, and illness level characteristics were statistically controlled).

Multivariate analysis of service use during the past year was conducted in two ways. In the first analysis, veterans who had used VA health services were compared with all other veterans, some of whom had used no health services during the year. The second analysis excluded veterans who had used no health services (31% of the total) and thus compared veterans who had used VA health services with veterans who had made exclusive use of non-VA health services. The results of the two sets of analyses were virtually the same and data presented are predominantly drawn from the first analysis.

Results

Wartime Era, War Zone, and Combat Service among Users of VA Health Services

Altogether, 95% of veterans who used VA health services during the past year had served during wartime; 71% had served in a war zone; and 55% in combat. Among veterans who had not used VA services, in contrast, 86% served in wartime, 48% in a war zone, and only 35% in combat. Although only 38% of VA health service users were service connected, it is clear that many more had been exposed to wartime danger, and 81% were either service connected or had served in a war zone.

Predictors of VA Service Use

The percentage of veterans who used VA services during the previous year and during their lifetime is presented in Table I according to various predisposing, enabling, and illness characteristics. In the entire population, a total of 5.8% of veterans surveyed had used VA inpatient or outpatient services during the previous year. In comparison to other veterans, both recent and lifetime VA health service use was higher among veterans who were older, black, less well educated at service entry, not married, and not employed (Table I). VA health service use was also progressively more frequent among those who served during a wartime era, in a war zone, or in combat, as well as among those who served for greater periods of time on active duty. The proportion of combat veterans who had used VA health services in the past year (8.8%) was more than twice that of all non-combat veterans (4.0%).

Two enabling factors, higher income and health insurance, were associated with less frequent VA health service use, suggesting that veterans with the means to use non-VA health care facilities tend to do so. The third enabling factor, service-connected disability status, was associated with the highest levels of VA health service use (25.1% in past year; 67.1%, lifetime). As one would expect, VA health service was also relatively high among those with current health care problems.

TABLE I

PERCENTAGE OF VETERANS WHO USED VA SERVICES BY PREDISPOSING, ENABLING, AND ILLNESS CHARACTERISTICS

	Percent Who Used VA Health Service: Past Year	Percent Who Used VA Health Service: Lifetime
All veterans	5.8%	21.2%
Predisposing characteristics: socio-demographic		
Age		
<30	1.9%	15.0%
30–49	4.0%	17.9%
50–59	5.0%	19.5%
>59	8.1%	25.9%
Race		
White	4.9%	19.5%
Black	15.1%	39.6%
Hispanic	6.0%	24.1%
Other	2.4%	16.7%
Education at Service entry		
<High school graduate	9.3%	29.9%
High school graduate	4.8%	18.9%
Some college	2.1%	12.7%
Employment		
Employed	2.6%	16.4%
Retired/disabled	12.5%	31.0%
Unemployed/other	8.6%	20.3%
Marital status		
Married	4.6%	19.6%
Widowed	12.6%	20.9%
Separated/divorced	10.5%	28.6%
Never married	8.4%	25.4%
Predisposing characteristics: military service		
Non-combat	4.0%	17.4%
Combat	8.8%	28.3%
Drafted	7.0%	23.1%
Enlisted	5.0%	20.2%
Years of service		
0–2	5.0%	20.2%
3–5	5.4%	20.3%
>5	9.8%	28.2%
Enabling characteristics		
Income		
<$10,000	12.5%	33.0%
$10,000–$20,000	7.1%	24.8%
>$20,000	2.4%	15.5%
Health insurance	3.5%	17.7%
No health insurance	20.5%	45.3%
Service-connected	25.1%	67.1%
Non-service-connected	4.0%	17.1%
Illness characteristics		
Health status		
Fair-poor	17.5%	42.9%
Good	4.7%	20.4%
excellent-very good	1.7%	13.4%
Health-related work limits	25.4%	50.6%
No health-related work	2.9%	17.0%
Any mental health problems	21.4%	48.6%
No mental health problems	4.8%	19.6%

Multivariate Models

Logistic regression analyses are presented in Tables II and III. The strongest predictors of both recent and lifetime VA health service use were illness level (the Illness Index) and enabling factors (service-connected disability, lack of health insurance). When veterans who used VA services were compared to veterans who used non-VA services, illness level was still found to be strongly associated with VA service use (Table III).

TABLE II

LOGISTIC REGRESSION ANALYSIS OF VA HEALTH SERVICE USE DURING THE PAST YEAR[a]

VA Health Service Use: Past Year Model $r^2 = 0.29$	Adjusted Odds Ratio	95% Confidence Interval	Significance (p Value)	Partial r	Partial r Rank Order
Predisposing factors					
Age (10 year interval)	0.89	0.80–0.98	0.0243	−0.03	9
Black	2.46	1.84–3.29	0.0000	0.10	4
Hispanic	1.04	0.61–1.77	NS	NS	
Employed	0.60	0.45–0.80	0.0006	−0.05	7
Married	0.72	0.56–0.91	0.0072	−0.04	10
Wartime era (any)	1.95	1.15–3.28	0.0125	0.03	11
War zone/combat (3)	1.27	1.12–1.45	0.0002	0.06	5
Drafted	1.01	0.79–1.28	NS	NS	
Years of military service (5 years)	1.16	1.06–1.28	0.0016	0.05	8
Enabling factors					
Service-connected disability	4.33	3.39–5.53	0.0000	0.19	2
Health insurance	0.35	0.27–0.44	0.0000	−0.14	3
Income (4)	0.80	0.70–0.90	0.0005	−0.05	6
Illness factors					
Illness index (7)	1.58	1.47–1.70	0.0000	0.20	1

[a]Parentheses indicate either the interval or the number of levels of non-dichotomous independent variables. Odds ratios for these variables reflect the change in likelihood of the dependent variable for each unit increase in the independent variable.

TABLE III

LOGISTIC REGRESSION ANALYSIS OF VA HEALTH SERVICE USE DURING THE PAST YEAR (VETERANS WHO USED NO HEALTH SERVICES EXCLUDED TO ALLOW COMPARISON OF VA SERVICES USERS AND USERS OF NON-VA HEALTH SERVICES)[a]

VA Health Service Use: Past Year Model $r^2 = 0.27$	Adjusted Odds Ratio	95% Confidence Interval	Significance (p Value)	Partial r	Partial r Rank Order
Predisposing factors					
Age (10 year interval)	0.80	0.72–0.89	0.0001	−0.07	5
Black	2.22	1.63–3.03	0.0000	0.09	4
Hispanic	0.96	0.55–1.67	NS	NS	
Employed	0.67	0.50–0.91	0.0099	−0.04	8
Married	0.74	0.57–0.96	0.0225	−0.03	10
Wartime era (any)	1.58	0.93–2.66	NS	NS	
War zone/combat (3)	1.29	1.12–1.47	0.0003	0.06	6
Drafted	1.05	0.81–1.35	NS	NS	
Years of military service (5 years)	1.02	1.00–1.04	0.0192	0.03	9
Enabling factors					
Service-connected disability	5.00	3.88–6.45	0.0000	0.22	1
Health insurance	0.29	0.22–0.37	0.0000	−0.16	2
Income (4)	0.76	0.67–0.86	0.0005	−0.05	7
Illness factors					
Illness index (7)	1.41	1.30–1.52	0.0000	0.15	3

[a]Parentheses indicate either the interval or the number of levels of non-dichotomous independent variables. Odds ratios for these variables reflect the change in likelihood of the dependent variable for each unit increase in the independent variable.

With other factors controlled, each increase in the 7-level Illness Index was associated with a 40% increase in the likelihood of VA health service use (adjusted odds ratio = 1.4; 95% confidence interval = 1.3–1.5). Veterans who use VA health services thus appear to be considerably sicker than those who used non-VA health services.

Several predisposing factors were also significantly related to VA health service use, including being black and the War Zone/Combat Index (Table II). Wartime era veterans were 95% more likely than peacetime veterans to have used VA health services in the past year (adjusted odds ratio = 1.95; 95% confidence interval = 1.4–2.4); and for each unit of increase in the War Zone/Combat Index the likelihood of VA service use during the previous year increased by 28% (adjusted odds ratio = 1.28; 95% confidence interval = 1.2–1.4). The likelihood of lifetime VA health service use also increased with service in a wartime era (adjusted odds ratio = 1.84; 95% confidence interval = 1.6–2.1) and by 20% for each level of the War Zone/

TABLE IV

LOGISTIC REGRESSION ANALYSES OF VA SERVICE USE IN RELATION TO WAR ZONE/COMBAT EXPOSURE AMONG SINGLE-ERA VETERANS OF WORLD WAR II, KOREA, AND VIETNAM, AND MULTI-ERA VETERANS, CONTROLLING FOR OTHER VARIABLES[a,b]

	Odds Ratio	95% Confidence Interval	*p* Value
VA Health service use: past year			
War zone/combat: WW II	1.16	0.97–1.40	NS
War zone/combat: Korea	1.22	0.84–1.76	NS
War zone/combat: Vietnam	1.45	1.11–1.89	0.0062
War zone/combat: multiple eras	2.40	1.07–5.38	0.0342
VA Health service use: lifetime			
War zone/combat: WW II	1.23	1.09–1.38	0.0004
War zone/combat: Korea	0.95	0.79–1.15	NS
War zone/combat: Vietnam	1.27	1.12–1.43	0.0002
War zone/combat: multiple eras	1.11	0.80–1.54	NS

[a]War zone/combat is a three-level independent variable. Odds ratios reflect the change in likelihood of the dependent variable for each unit increase of the independent variable.

[b]Each of the 12 logistic regression models controls for covariates presented in Table II and Table III. Multiple-era veterans served in more than one era (11% of World War II veterans; 27% of Korean veterans; and 10% of Vietnam veterans).

Combat Index (adjusted odds ratio = 1.20; 95% confidence interval = 1.16–1.24).

Use of VA Services by Veterans of Different Wartime Eras

With other factors controlled, there were no significant differences in current or lifetime VA health service use among veterans of particular war eras or who served in multiple war eras.

War-Zone Exposure within Service Eras

In separate analyses of single era veterans of World War II, Korea, and Vietnam, it was only among Vietnam veterans and multiple war era veterans that the War Zone/Combat Index was significantly associated with increased VA health service use during the past year (Table IV). However, among both World War II and Vietnam veterans the War Zone/Combat Index was associated with more frequent lifetime VA health service use. This relationship was not significant for Korean era veterans and the trend was slightly in the negative direction.

Discussion

Historians have observed that while, at the outbreak of war, soldiers are often tacitly promised lifelong adulation and support in exchange for their service and sacrifice, public concern for the welfare of former soldiers tends to wane after hostilities are concluded.[4,7,8,16–19] In this century, in particular, veterans' organizations have placed a high priority on the maintenance of an independent veterans' health care system, and their commitment to VA health care has been strengthened by the discovery, in recent years, of previously unrecognized associations between military service and various health hazards (e.g., Agent Orange toxicity, radiation-related illnesses, and post-traumatic stress disorder). It can be expected that veterans of the ODS era will similarly seek their full measure of VA health services, and the coming years may thus may bear witness to a complex debate between the needs and interests of veterans, including ODS veterans, and the initiatives of cost-conscious health care planners.

Service utilization data of the type presented here do not, by themselves, delimit the appropriate role of VA health care services in compensating, rewarding, or honoring the wartime service of America's veterans. They do, however, allow consideration of the relationship of military experience to use of VA health care services. Like others, we found VA health care to be most strongly associated with poor health, service-connected status, lack of health insurance, and low income. Sicker veterans are more likely to turn to the VA for assistance than to non-VA providers (even after controlling for other relevant factors), and veterans who have made the poorest overall post-war adjustments are, by all measures, those most likely to use VA health care services.

Although only about one-third of VA health service users are service-connected, the majority were exposed to combat and almost three-quarters served in a war zone. Most veterans who use VA services have thus placed their lives at some risk in national service. Furthermore, totally apart from their higher rates of service-connected disability, their lower socio-economic status, and their poorer health, veterans who served in a wartime era, in a war zone, or in combat show a decided preference for VA health service. The link between combat service and VA health care utilization is clearly evident. We may conclude from these data that although VA health care services reach a relatively small sub-group of veterans, that sub-group is in substantial need of assistance, and, by virtue of its prior military service, clearly deserving.

Veterans of American wars differ from one another in many respects,[20] and much has been made in recent years of the alienation of Vietnam veterans who fought in an unpopular war and who were subject to an often hostile reception when they came home.[15,21] Contrary to our hypothesis that these circumstances would result in less VA service use by Vietnam veterans, there were no significant differences between veterans of different war eras in their use of VA health services (after

adjusting for illness level and other potentially confounding variables).

Vietnam war zone and combat veterans were significantly more likely than other Vietnam era veterans to have used VA health services during the past year, and war zone and combat veterans of both Vietnam and World War II were significantly more likely than other veterans of these eras to have used VA health care services in their lifetimes. In contrast to our initial hypothesis, the veterans that stand out as relative under-utilizers of VA services are not Vietnam veterans, but rather war zone and combat veterans of the Korean conflict.

In contrast to the total victory achieved in World War II, and the national attention focused on Vietnam veterans during the past decade, the Korean conflict ended in a negotiated stalemate[22] and has remained "the forgotten war."[23] While the poor reception of Vietnam veterans on their return home has been apologetically acknowledged, few even remember the public controversies that surrounded Korean veterans. In the mid-1950s, for example, stimulated by reports (subsequently discredited) that some Korean POWs had "converted" to Communism, the conduct and valor of Korean veterans were publicly questioned, and their presumed poor performance in the war was touted by some as a worrisome sign of the deterioration of the American spirit.[19] Unlike Vietnam veterans, who came of age during the "activist" 1960s and who were able to rally public attention and concern for their problems during the 1980s, Korean veterans were part of a more politically passive generation and they did not generate public interest or support on their behalf. Public attitudes toward veterans and the wars in which they served do seem to have had an impact on patterns of VA health service utilization. The high level of public support for ODS service men and women may thus be a harbinger of similarly high demands for VA services when they become veterans.

Conclusion

In the coming years, the tradition of health care for veterans and the current direction of national health care policy may find themselves in conflict. The health service utilization data presented here may serve as a reminder, in that debate, that VA health care use has been characterized, historically, by a distinctive relationship to service in wartime eras, in war zones, and in combat.

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