

# Variations in Health Communication Needs Among Combat Veterans

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In this cross-sectional study of US military combat veterans, we assessed the helpfulness of different media for providing health risk communication messages. We have provided preliminary results from a postal survey of 5000 veterans sampled because of their deployment to Vietnam, the Persian Gulf, or Bosnia–Kosovo. Respondents endorsed the primary care provider as the most helpful source of health information. Access to the Internet and use of this medium for seeking health information differed by race, age, and cohort. (*Am J Public Health*. 2004;94:2074–2076)

Military personnel deployed to war zones face a variety of physical, environmental, and psychological exposures.<sup>1,2</sup> Concern about health consequences related to exposures may lead veterans to visit health care providers for treatment and health risk education.<sup>3,4</sup> Risk communication regarding potential health outcomes is a fundamental task in the successful treatment of combat veterans.<sup>5–7</sup> We have provided preliminary findings from a population-based survey of health concerns and preferred sources for health risk communication among combat veterans.

## METHODS

### Design

This cross-sectional, 206-item postal survey sampled 5000 veterans from the Vietnam War (1964–1973), the Persian Gulf

War (1991), and the Bosnia–Kosovo peacekeeping activity (1995–2002). Approximately equal numbers of veterans from the Vietnam War, the Persian Gulf War, and the Bosnia–Kosovo peacekeeping activity were selected from Department of Defense personnel rosters. Initial findings from the first of 3 survey mailings have been reported here.

### Measures

We asked participants to rate the helpfulness of different media for obtaining health information on a 10-point scale and to answer items regarding access to and use of the Internet.

### Data Analysis

Mean scores for helpfulness ratings were computed and tested to assess differences by race for each communication mode. Proportions that had access to the Internet and used it to find health information were reported by conflict and race. Differences in Internet access by race were tested with the Pearson  $\chi^2$  statistic. Trends for Internet use by age and conflict were tested with regression analysis and the Cochran–Armitage trend test, respectively.<sup>8</sup>

## RESULTS

### Subjects

The overall response rate for the first wave of surveys (N=1432, 29%) showed variation by conflict, with the highest response rate from Vietnam veterans (n=740, 45% of Vietnam sample), followed by veterans from the Persian Gulf War (n=462, 28% of the Persian Gulf sample) and the Bosnia–Kosovo peacekeeping activity (n=230, 14% of the Bosnia–Kosovo sample). A small group of respondents served in more than 1 conflict (n=109).

The respondents were predominantly White (80% overall), which was comparable to the sample distribution (77% overall). Black veterans represented 17% of the sample but only 10% of respondents. The mean age of Vietnam veterans was 60.4 years, of Persian Gulf War veterans was 45.6 years, and of Bosnia–Kosovo peacekeeping activity veterans was 41.7 years.

### Helpfulness of Health Information Sources

When participants rated the helpfulness of health information sources, “own doctor” received the highest mean scores overall and across conflict and race subgroups (Table 1). In contrast, “VA doctor” received the lowest score for helpfulness overall, with significant differences observed by race and cohort. Non-White respondents assigned higher scores than did Whites for the helpfulness of “VA doctor” across all categories, with significant findings for all conflicts combined ( $P=.008$ ) and Persian Gulf War veterans ( $P=.05$ ).

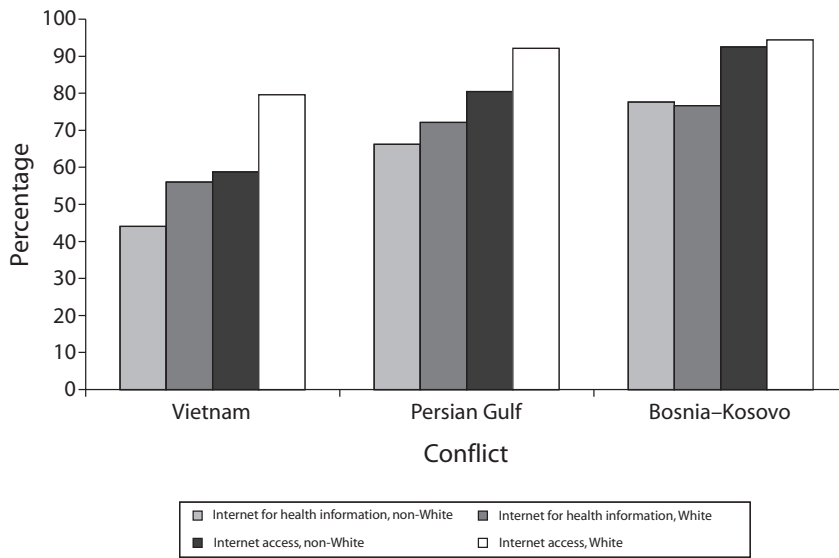
Pamphlets or brochures and Department of Veterans Affairs (VA) newsletters were given the second and third most favorable mean scores for helpfulness (6.6 and 6.5, respectively). Newsletters from Veterans Service Organizations were considered more helpful by non-White Vietnam veterans ( $P=.02$ ) and by non-Whites for the 3 cohorts combined ( $P=.04$ ). Television received a low mean score (5.7) relative to other modes for receiving health information but showed a statistically significant difference by race, with a preference expressed by non-White respondents from the Persian Gulf War ( $P=.01$ ), from Bosnia–Kosovo ( $P=.03$ ), and overall ( $P=.002$ ). Regression analyses found that decreasing age strongly predicted higher ratings for the helpfulness of Web sites as a source of health information ( $\beta=-0.045$ /year;  $P<.001$ ;  $R^2=0.03$ ).

### Internet Access

Access to the Internet and use of this medium for obtaining health information have been increasing with successive cohorts (Cochran–Armitage trend test,  $P<.001$ ; Figure 1). Differences in access to the Internet for Whites and non-Whites were largest for Vietnam veterans (nearly 20%,  $P<.001$ ) and narrowed over time (12% for the Persian Gulf War veterans,  $P<.001$ ; and 2% for Bosnia–Kosovo veterans,  $P=.62$ ).

## DISCUSSION

These preliminary findings indicated high Internet use among veterans, suggest-



**FIGURE 1—Percentage of combat veterans from Vietnam War, Persian Gulf War, and Bosnia-Kosovo conflicts who have any access to the Internet and who use the Internet to obtain health information, by race.**

than did Whites, suggesting greater receptivity to a wider array of information sources.

These findings reinforce the role of the primary health care provider as the most helpful resource for health risk communication. For VA health care providers, having access to knowledge resources and supporting materials related to postdeployment health is critical. Recognizing this need, the VA recently created the War Related Illness and Injury Study Centers, with an expressed purpose of addressing the health risk communication needs of combat veterans. These results will help to form the basis of future postdeployment health risk communication activities in the VA. ■

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ing that the Internet offers an important channel for delivering health risk information to combat veterans. Internet access among Vietnam veterans (77%; 50–87 years old) was higher than that among the general US population (62% of 50- to 58-

year-olds, 46% of 59- to 68-year-olds).<sup>9</sup> Greater familiarity with the Internet among younger cohorts of veterans makes this medium an especially important tool for risk communication messages. Also, non-Whites rated a variety of media more favorably

**TABLE 1—Helpfulness Ratings<sup>a</sup> of Different Modalities for Receiving Health Risk Information, by Race and Conflict: Mean Scores (SD)**

Information Source	Total (N = 1288)	All Conflicts			Vietnam			Persian Gulf			Bosnia-Kosovo		
		White (n = 1034)	Non-White (n = 254)	P	White (n = 662)	Non-White (n = 109)	P	White (n = 405)	Non-White (n = 148)	P	White (n = 158)	Non-White (n = 67)	P
Own doctor	7.2 (2.8)	7.3 (2.7)	6.8 (3.0)	.1	7.3 (2.8)	7.2 (3.1)	.73	7.0 (2.6)	6.4 (3.1)	.11	7.5 (2.5)	6.7 (3.0)	.11
Pamphlet or brochure	6.6 (2.7)	6.6 (2.7)	6.7 (2.6)	.58	6.6 (2.8)	6.8 (2.7)	.76	6.5 (2.6)	6.7 (2.6)	.49	6.3 (2.6)	6.8 (2.6)	.24
VA newsletter <sup>b</sup>	6.5 (2.9)	6.5 (2.9)	6.5 (2.8)	.97	6.5 (3.0)	6.6 (2.9)	.99	6.6 (2.7)	6.4 (2.8)	.58	5.7 (2.9)	6.5 (2.8)	.09
VSO newsletter <sup>c</sup>	6.1 (3.0)	6.0 (3.0)	6.4 (2.9)	.04	6.0 (3.1)	6.8 (2.9)	.02	6.2 (2.8)	6.4 (2.9)	.47	5.5 (2.8)	6.1 (3.1)	.18
Web site	6.0 (3.1)	5.9 (3.0)	6.3 (3.0)	.06	5.6 (3.1)	5.7 (3.3)	.66	6.3 (2.9)	6.1 (3.0)	.73	6.2 (2.9)	6.9 (2.9)	.08
Television	5.7 (2.8)	5.6 (2.7)	6.1 (2.8)	.002	5.6 (2.8)	5.9 (2.9)	.27	5.5 (2.6)	6.1 (2.9)	.01	5.5 (2.8)	6.5 (2.6)	.03
Newspaper article	5.6 (2.7)	5.6 (2.7)	5.8 (2.8)	.15	5.7 (2.7)	5.8 (2.9)	.71	5.4 (2.5)	5.6 (2.9)	.27	5.4 (2.8)	6.1 (2.7)	.09
VA doctor	5.5 (3.2)	5.4 (3.2)	5.9 (3.2)	.008	5.2 (3.2)	5.8 (3.4)	.12	5.4 (3.0)	6.0 (3.1)	.05	5.5 (3.3)	5.8 (3.1)	.55

Note. Kruskal-Wallis test used to compare distributions of scores for Whites and non-Whites. P for  $\chi^2$  statistic shown. Missing responses for helpfulness ratings ranged from 5% to 32%; Vietnam veterans, 12%–32%; Persian Gulf War veterans, 5%–14%; and Bosnia-Kosovo peacekeeping activity veterans, 5%–12%.

<sup>a</sup> Range: 1 = not very helpful; 10 = very helpful.

<sup>b</sup> VA newsletter = official publication of the Department of Veterans Affairs (VA).

<sup>c</sup> VSO newsletter = publication of a congressionally accredited Veterans Service Organization.

### Contributors

A. I. Schneiderman assisted in originating the study, drafted the brief, and conducted the data analysis and interpretation. A. E. Lincoln assisted in the data analysis and interpretation and in the editing of the brief. B. Curbow assisted in originating the study, interpreting the analysis, and editing the brief. H. K. Kang assisted in originating the study and editing the brief.

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### Human Participant Protection

This study was approved by the institutional review board of the Department of Veterans Affairs Medical Center, Washington, DC.

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