

# Research News

## Vietnam's Psychological Toll

*In the clamor over Agent Orange, the Vietnam war's psychological toll has been largely overlooked. A new study shows it was substantial.*

THE VIETNAM WAR transformed a generation. To find out what it did to the men who fought its battles, the Centers for Disease Control (CDC) is completing the most massive epidemiologic study yet of Vietnam veterans. In keeping with other recent studies, the CDC study found few long-lasting deleterious physical effects. But it showed the war's psychological toll to be substantial.

Fifteen to twenty years later, Vietnam veterans are more than twice as likely to suffer from serious psychological problems—alcohol abuse, major depression, and anxiety—as soldiers who did not serve in Vietnam.

The Vietnam Experience Study, as the CDC project is called, also found that 15% of Vietnam veterans have suffered from combat-related posttraumatic stress disorder, or PTSD, since their discharge, and 2% are currently affected—an estimate that is being challenged as both too low and too high, but mostly too low. Only recently recognized as a psychiatric disorder, PTSD is the center of a heated and seemingly intractable debate on how prevalent it is and thus which veterans should be compensated.

The CDC study, a summary of which was published recently in the 13 May *Journal of the American Medical Association*, comes at a time when Congress is debating whether to extend funding for the Veterans Administration's (VA) storefront mental health clinics set up specifically for Vietnam veterans. With its clear signal of continuing problems, the study seems likely to derail efforts by the Office of Management and Budget and the VA to disband the clinics.

But the study is unlikely to quell the broader debate about the psychological aftermath of the war. No one disputes that some Vietnam veterans remain deeply troubled, but how many are affected, and whether the war caused or merely exacerbated their problems, are still open to debate, as is the question, Was the Vietnam war different from other wars in some fundamental way?

The debate hinges on arcane issues of analytical instruments and their validation, as well as how to sort out the complex relationships between war, combat intensity, predisposing factors, and later psychological problems.

The Vietnam Experience Study was a massive, 4-year effort costing \$23 million and involving scores of epidemiologists and some 15,000 veterans. CDC's goal was to identify the possible health effects of the entire Vietnam experience, intentionally sidestepping the contentious and scientifically knotty issue of exposure to Agent Orange.

In all, CDC compared the health of about 7000 Army veterans, who served in Vietnam between 1965 and 1971, with that of about 7000 non combat Army veterans who served elsewhere at the same time. The study consisted of a lengthy telephone interview and, for a random subset—about 35% in each group—extensive physical and psychological examinations at a private hospital in Lovelace, New Mexico.

The physical exams turned up an expected hearing loss among Vietnam veterans, as well as disturbing and unexplained changes in sperm count that nonetheless did not impair fertility.

But it is in the psychological area that clear problems emerged. About 14% of Vietnam veterans currently have problems with alcohol abuse or dependence, CDC found, as opposed to 9% of non-Vietnam veterans. Five percent of the Vietnam veter-

ans suffer from major clinical depression, as opposed to 2% of the controls, and 5% suffer from generalized anxiety, versus 2%.

"These are not trivial disorders, and the study shows big differences between those who served in Vietnam and those who didn't," says William Eaton, a psychiatric epidemiologist at Johns Hopkins University. "Vietnam raises the risk for enduring psychological problems by a factor of 2.5."

CDC emphasizes, however, that only a minority of Vietnam veterans are affected and that their problems "are not of a magnitude that has resulted in Vietnam veterans having, as a group, lower social and economic attainment." About 90% in both groups were employed, and 60% of those who had ever married were still married to their first wives. About 90% of both groups said they were satisfied with their personal relationships. CDC also found little sign of existing drug abuse—about a half percent in each group—a surprising finding, as their earlier mortality study suggested that drug-related deaths were higher among Vietnam veterans throughout 13 years of follow-up.

The study does confirm, however, that the war was toughest on nonwhites, as well as on younger men—those under 19 when they entered the service—and on men with

**Vietnam veterans.**  
*Twice as likely to have enduring psychological problems.*



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lower mental aptitude scores. Other studies, such as the 1981 *Legacies of Vietnam* study, suggest that it is specifically blacks who are the most at risk.

Why blacks would be more vulnerable is not clear, but speculation ranges from predisposing factors to discrimination suffered after the war. Says Robert Laufer, a sociologist at City College of New York who directed the *Legacy* study: "It is not just being black, but all that being black brings."

But the strongest predictor of later psychological distress turns out to be the date of entry into the service—a finding that is difficult to interpret but suggests that the culture surrounding the war may profoundly influence its effect. Those who entered the army between 1965 and 1967 were twice as likely as controls to have current problems, CDC found. After 1968, rates tend to level off: the prevalence of psychological problems increases in control group and drops slightly among Vietnam veterans.

"This suggests some change occurred around 1968, but we cannot specify what that change may have been," the CDC study authors write. Possibilities include "not only changes in the nature of the Vietnam conflict, but also changes in American societal attitudes and perceptions about the conflict and changes in attitudes or expectations of men entering the army."

1968, the year of the Tet offensive and the Democratic National Convention in Chicago, was perhaps peak of antiwar fervor in the United States. Frank DeStefano of CDC speculates that the men who entered earlier might have been more supportive of the war. "What happened might have been more of a shock. Later, men were perhaps less idealistic, and less likely to have been shocked by what was going on."

Although people may quibble about exact percentages, there is little dispute about CDC's findings on depression, anxiety, and alcohol abuse.

But when it comes to posttraumatic stress disorder, all consensus breaks down. CDC found that 15% of Vietnam veterans have had PTSD at some time during or since their service, and 2% are currently affected—figures widely challenged as too low. The dispute over prevalence arises from a number of reasons that range from the most basic question of whether PTSD even exists to methodological disputes about how CDC measured it.

The subject is also emotionally and politically charged as it bears directly on issues of veterans' compensation and the need for treatment. For any other physical or psychological ailment, a veteran must file a claim within 1 year of discharge to receive service-connected disability pay. But for PTSD, a



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Quang Tri, South Vietnam, 1971.

veteran can receive compensation even if onset begins years later—if he can prove he has it. And that, some veterans say, is the catch. Not surprisingly, Congress and the VA want to know exactly how many Vietnam veterans have PTSD, and Congress has mandated another study specifically to find out.

Some of the furor surrounding the disorder stems from its newness. Only in 1980—after years of intense lobbying by veterans groups—did the American Psychiatric Association officially recognize PTSD and add it to the psychiatric lexicon, the *Diagnostic and Statistical Manual of Mental Disorders*.

As now defined PTSD is the development of a set of symptoms in the aftermath of a psychologically distressing event—an event "outside the range of normal human experience." The symptoms include nightmares, flashbacks, hypervigilance, exaggerated startle reaction, insomnia, and a withdrawal from the world known as "psychic numbing."

The debate in 1980, and still today, was not whether some veterans had these symptoms. Rather, the question was whether this cluster of symptoms fit together in a distinct disorder or might be more accurately described as a combination of depression and anxiety. "The jury is still out on whether it can be categorized as a discrete entity," says John Helzer, a psychiatrist at Washington University.

Except to a few die-hards, says Laufer, "it is now fairly reasonably clear that PTSD exists and does have particular kinds of antecedent roots in trauma. The problem now is clarifying what it is and how it functions in people's lives."

Like most disorders, PTSD can range in severity from mild to devastating. But for PTSD, severity seems particularly difficult to judge. Explains Eaton: "Clearly, there are

some flashbacks that are debilitating and some memories that are trivial. In the CDC study, 32% of the subjects had recurrent thoughts or dreams. But how do you distinguish a thought from a terrifying dream? The study asks if they avoid situations that remind them of the event. Of course they do. The question is, how much?"

Also at issue is the duration and pattern of PTSD, which nonlongitudinal studies such as the CDC one fail to address. Helzer, for one, thinks PTSD is often shortlived—lasting less than 6 months. Others, like Richard Hough of San Diego State University, say it can last a lifetime and is exacerbated by other life stresses. "It is a chronic phenomenon that varies in intensity."

Hough's best guess is that 8 to 10% of Vietnam veterans have had PTSD sometime since their service, and that most who have had it, still do. "You don't cure PTSD. You help people live with it."

It is the prevalence of PTSD that Congress and the VA are most interested in. And prevalence, clearly, comes down to how you measure it—which is where many investigators part ways. Specifically, the factions split over the Diagnostic Interview Schedule, or DIS, the instrument CDC used.

For most disorders, the DIS works reasonably well—it predicts the same prevalence of, say, depression in a population as do psychiatrists. But detecting depression is far simpler than detecting PTSD, which is a horrendously complex diagnosis that asks people to tie together current symptoms with an event that happened years earlier. Moreover, the part of the interview that deals with PTSD has never been clinically validated. Says Laufer: "That poses a problem in an area in which we don't know much to begin with."

The best fix on the prevalence of PTSD should come from the congressionally mandated Vietnam Veterans Readjustment Study scheduled for completion this fall. "Our data will not be terribly consistent with CDC on PTSD," says Richard Kulka of Research Triangle Institute, where the VA-funded study is being conducted. "We will probably see a lot more PTSD. I don't mean we will shock people, but a current level of, say, 10 to 15%, is very high, especially if you play out the number of people involved."

Perhaps the CDC study's greatest shortcoming is what it leaves unanswered. It provides a rough snapshot of the war's aftermath, but, as Laufer and others point out, it fails to sort out what it was about the war that caused enduring problems, and thus, which veterans are particularly at risk.

"Studies have shown over and over again that it is not being in Vietnam that causes

problems but what happens to you there, how much death and dying you see," says Laufer. Specifically, three aspects of wartime experience emerge as crucial in predicting later problems: moderate to intense combat, loss of buddies, and witnessing or participating in abusive violence or atrocities. Says Laufer: "The study ignores them in a very fundamental way."

As CDC readily admits, the measure of combat exposure they used—military occupational specialty—provides only a rough indication of whether men saw combat and no sense at all of how intense it was.

Nor does the study begin to sort out the role of all the other factors, such as prior psychological problems or postwar setbacks, that are inextricably linked to adjustment in the aftermath of war.

Underlying all these studies is the question, Was the Vietnam war different in some way, and did it exact a higher psychological toll? There is no ready answer. Studies of the psychological aftermath of war began in earnest following World War II, but they tended to focus on distinct groups, such as POWs or men who broke down under combat. Only since Vietnam has the focus shifted to the average GI.

Although data are lacking, many suspect Vietnam was more stressful, for several reasons, including the guerrilla nature of the war, the widespread use of drugs, the suspected number of atrocities, and, perhaps most important, the unpopularity of the war and lack of support from home.

"War produces all kinds of casualties, both emotional and psychological," says Eaton. "Vietnam probably produced more than usual because of the guilt. People were unsure they were doing the right thing. And guilt is one thing that keeps emotional problems alive." As Eaton points out, natural disasters can also trigger PTSD, but invariably, it is of short duration. "Long-term trauma arises when there is someone to blame, especially if you blame yourself."

Laufer, on the other hand, is not so sure that Vietnam was more stressful than other wars. "The war experience sets people off from others and comes back and haunts their lives in more or less severe ways. This is not peculiar to Vietnam but is a characteristic of people who went to war."

What is different, he says, is that it is easier to examine these questions in the context of Vietnam because "it was a bad war." After World War II, says Laufer, "there was an environment that said this price was necessary. But in Vietnam, the price could not be justified. That does not mean both groups did not pay a price."

■ LESLIE ROBERTS

# Health Workers and AIDS: Questions Persist

*An NIH health worker injured in the lab now tests positive for the AIDS virus, but researchers are still uncertain why some workers exposed to the virus become infected and others do not*

ANOTHER HEALTH CARE WORKER is infected with the AIDS virus, probably because of an injury at work. The incident, which occurred at NIH, is similar to several reported previously by the Centers for Disease Control (CDC) in Atlanta. The worker was injured while handling blood from a patient infected with the AIDS virus, called HIV for human immunodeficiency virus. "The fact that it occurred is tragic but there is nothing unusual about the accident," says Robert McKinney, director of the division of safety at NIH.

The incident underscores the need to explain why only a few health care workers exposed to HIV become infected while the vast majority do not. The recent case also calls attention to a controversial study by Burroughs Wellcome Co. in Research Triangle Park, North Carolina, to test AZT—alternately called Retrovir or zidovudine—in health care workers exposed to HIV before evidence of infection occurs.

"The work was routine and the individual was well trained," says McKinney, referring to the recent case. A vial containing HIV-infected blood accidentally broke in the worker's hand and cut through a glove and into the skin. An initial test for antibodies to HIV was negative but subsequent tests were positive, allowing health officials to conclude that the infection probably resulted from the accident. The accident is largely dissimilar to two reported cases of HIV infection in laboratory workers employed by companies under contract to NIH. Both of these people were handling material that probably contained high concentrations of virus and only one had a documented injury.

Combined data from surveillance studies of health care and laboratory workers at the CDC, NIH, and University of California indicate that more than 2200 people have been injured on the job while working with blood or other materials known to be contaminated with HIV. Sixteen—a number that includes the recent case—developed antibodies after being exposed to the virus at work. Another seven workers also have antibodies, but may have had them before entering the study. Researchers estimate the in-

fection rate within this group at less than 1%. "It is interesting that a number of these workers seem to develop antibodies very rapidly after their initial exposure to HIV," says McKinney. Several experienced a fever soon after exposure to HIV, as the recently infected person did. But the basic question of why these people developed an infection, while other workers with similar exposures to HIV are not infected, remains unanswered.



**Robert McKinney.** "The fact that the infection occurred is tragic but there is nothing unusual about the accident."

Researchers are investigating a range of factors that may address the issue. One possibility, for example, is that an infected person who has diagnosed AIDS—as opposed to a person who carries HIV but is still healthy—is more likely to transmit the virus. Researchers do not yet know if a patient's stage of disease alters the risk to workers who are accidentally exposed to the patient's blood. Other factors include biological differences in HIV that may make some strains of the virus more infectious, biological differences in the person exposed