FEATURE

Hispanic Ethnicity and Risk for Combat-Related Posttraumatic Stress Disorder

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Hispanic veterans are said to exhibit higher risk of developing posttraumatic stress disorder (PTSD) than veterans of other racial/ethnic backgrounds. This prediction is based largely on findings from the National Vietnam Veterans Readjustment Study (NVVRS; R. A. Kulka et al., 1990a, 1990b). This article first summarizes the findings of the NVVRS with regard to race/ethnicity and PTSD, and then it makes a careful assessment of both the external and the internal validity of these findings. Conceptual issues are addressed and, where possible, further analyses of the NVVRS data set are conducted to identify factors that account for ethnic differences in rates of the disorder. Possible mediators of the effects of Hispanic ethnicity on vulnerability to PTSD are identified, including psychosocial factors (racial/ethnic discrimination and alienation) and sociocultural influences (stoicism and normalization of stress, alexithymia, and fatalism). Areas in which future research is needed are indicated.
• *PTSD* • *Hispanic* • *ethnicity*

Ethnic minorities are often said to exhibit higher rates of combat-related posttraumatic stress disorder (PTSD) than nonminorities. A scan of the existing epidemiological data would lead the reader to a more specific prediction: Hispanic veterans seem to be at an even higher risk of developing this disorder than are African American vet-

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erans. This prediction is based largely on findings from the National Vietnam Veterans Readjustment Study (NVVRS; Kulka et al., 1990a, 1990b), a comprehensive, multimeasure survey of Vietnam veterans. Similar prevalence rates have been found in other studies (e.g., Centers for Disease Control, 1988; for a recent and thorough review of the empirical literature on racial differences in PTSD among combat veterans, see Frueh, Brady, & Arellano, 1998).

If one is to accept that Hispanic soldiers are at greater risk of developing PTSD than their White counterparts and even other non-Hispanic soldiers of color, it is important to examine closely the data on which this claim is based. For example, was the NVVRS sample of Hispanic veterans truly representative of those who served in Vietnam? More fundamentally, how was the label "Hispanic" defined? Careful assessment of both the external and internal validity of the NVVRS findings with respect to this issue seems especially important because these findings may influence future research directions, treatment decisions, and public policy.

If these and other questions of validity are adequately dealt with, and Hispanic veterans are still found to have higher PTSD prevalence, then one would need to ask why this is so. The NVVRS authors' call for further research into the risk factors associated with race/ethnicity has largely gone unanswered (see Frueh et al., 1998), and therefore many questions remain. How did Hispanics cope with their war-zone experiences? Are there stressors that were unique to Hispanics who went to Vietnam? Are there current stressors for this group that could be contributing to observed differences in PTSD rates? Are there cultural differences in dealing with the emotional aftermath of trauma that may influence risk for PTSD? Using the NVVRS data set, we attempt to answer these questions and others that stem from them. We begin by summarizing the findings of the NVVRS with regard to race/ethnicity and PTSD and describing how racial/ethnic identity was categorized in the study. For each question, we speak to conceptual issues and, where possible, conduct further analyses of the NVVRS data set to identify factors that account for these differences. By forming a clearer picture of what is known and unknown, we hope to identify possible mediators of the effects of Hispanic ethnicity on vulnerability to PTSD and indicate where future research is needed.

Findings of the NVVRS

The NVVRS (Kulka et al., 1990a, 1990b) provides the most extensive database for the study of the effects of war-zone experiences on veterans. The study entailed a survey interview of 3,016 non-treatment-seeking Vietnam veterans and civilians from the community, including 1,200 male veterans exposed to the Vietnam theater of operations, or war zone.[1] Those veterans in the NVVRS who served in Vietnam were referred to as *theater veterans*, and those who served in the military during the Vietnam era but not in Vietnam were referred to as *era veterans*. Using face-to-face survey interviews, participants were assessed in a variety of domains: marriage and family life, education and occupation, military service and Vietnam experience, stressful and traumatic life experiences, substance use, psychiatric disorder, physical health, and use of health and mental health services. In addition to the survey interview given to all participants, a subsample of over 300 theater veterans and 100 era veterans

[1]Fewer than 10,000 of the 3.14 million soldiers who served in Vietnam were women, and nearly 97% of the women were White. Therefore, no race/ethnicity analyses were conducted for female theater veterans in the NVVRS. In addition, more than 80% of the female theater veterans were nurses, so their war-zone experiences were different from the average male combat veteran. See Kulka et al. (1990a, 1990b) for more information on gender differences in PTSD among Vietnam veterans.

participated in a comprehensive, multimeasure clinical assessment, and the spouses or partners of over 450 theater veterans were interviewed as well.

In the planning of the study, the NVVRS investigators paid particular attention to race and ethnicity. A few small-scale studies carried out prior to the NVVRS indicated that PTSD might be more prevalent among Vietnam veterans of color. Some research had indicated that African American soldiers were at higher risk than other groups (e.g., Penk et al., 1989), whereas some data suggested that Hispanic soldiers had higher rates of PTSD (e.g., Escobar et al., 1983). The NVVRS investigators therefore decided to oversample certain ethnic minorities to gain the necessary statistical power to estimate accurately the rates of the disorder in these groups. As a result, of the total sample, 26.8% were Black, 22.9% were Hispanic, 48.9% were White, and 1.4% were of other ancestry.[2] (The actual percentages of ethnic minority veterans in the military during the Vietnam era were 11% African American and 5% Hispanic.)[3]

Based on a multimeasure procedure (Schlenger et al., 1992), 15.2% of male theater veterans were estimated to have a current diagnosis of PTSD, and 30.9% were estimated to have suffered from PTSD over their lifetime. These estimates were based on all theater veterans without regard to ethnicity. The ethnic differences in the prevalence of PTSD were marked: Among theater veterans, 20.6% of Blacks and 27.9% of Hispanics met criteria for a current diagnosis of PTSD, compared with 13.7% of White/other veterans (the differences between all three groups were statistically significant).

Predisposing factors were next examined to determine if they were accounting for differences in PTSD rates among ethnic groups. For all theater veterans, four major variables were found to contribute to PTSD caseness: growing up in an economically deprived family, symptoms of drug abuse or dependence before the military, symptoms of affective disorder before going to Vietnam, and behavior problems in childhood. When these preexposure variables were controlled for, the difference in PTSD rates between Blacks and Hispanics disappeared, but these minority groups still had a higher prevalence rate than White/other veterans.

Finally, the contribution of war-zone stress exposure was examined by means of a multidimensional index that reflected five underlying stressor domains: exposure to combat, exposure to abusive violence and related conflicts, deprivation, loss of meaning and control, and prisoner of war status. On the basis of careful statistical analyses, the top quartile of index scores were labeled "high" combat stress exposure, and the remaining three quartiles were labeled "low/moderate" exposure. Theater veterans were divided into these two groups on the basis of their scores on the global index. Black and Hispanic veterans were found to have experienced higher war-zone stress exposure than were White/other veterans. Furthermore, after predisposing factors and war-zone stress exposure were controlled for, the difference between PTSD rates for Black and White/other veterans disappeared, but Hispanics still had a higher prevalence rate than Whites/others and a higher rate than Blacks. The NVVRS investigators summarized this finding in the following manner:

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[2]In this article, we generally use the terms "Hispanic," "African American," and "White" to refer to the three racial/ethnic groups discussed (on occasion, "nonminority" or "non-Hispanic" is used interchangeably with "White," depending on the group with which White respondents are being compared). The NVVRS used a slightly different naming convention, referring to participants as "Hispanic," "Black," or "White/other." To minimize confusion, we use the survey authors' racial/ethnic labels when referring to their findings.

[3]Several authors have commented on the NVVRS's lack of data on Native Americans and Asians, the two other major ethnic minority groups in the United States. For example, the 8 Asians studied were lumped with the White category under "other" (Loo, 1994). The decision not to oversample these and other racial/ethnic groups in the NVVRS was based on their very low numbers in the population and the fact that these other categories were not recorded in the military records from which the samples were drawn.

> even after adjusting for a large number of potentially predisposing variables and for exposure to war-zone stress, the current prevalence of PTSD among Hispanics is about 5 percent higher than among Whites and about 6 percent higher than among Blacks. It remains for further analysis to identify the factors that account for these differences. (Kulka et al., 1990b)

To date, researchers have failed to examine the psychological and social factors that led to greater risk for Hispanic veterans.

What Was the Nature of the Hispanic Subsample in the NVVRS?

The NVVRS used estimates of the racial makeup of the entire Vietnam era veteran population in generating their sampling scheme. On the basis of respondents' self-identification from a list of racial categories, they derived the following estimates: 1.6% American Indian/Alaskan, 0.3% Asian, 0.2% Pacific Islander, 10.8% Black, 87.1% White, and 0.1% other. These figures are close to estimates from 1986 for the United States population by the U.S. Bureau of the Census (e.g., 12.2% Black and 84.7% White).

In a separate question, the researchers asked veterans if they were of Hispanic origin. On the basis of this query, they estimated that 4.7% of the total veteran population were of Hispanic background (this is compared with 7.5% of the total U.S. population at the time of the survey, based on U.S. Census data).

The Hispanic group was further divided into subcategories: Hispanic respondents were given a choice of labels to identify their specific ethnic identity. Over half (62.4%) were categorized as being of Mexican background, identifying themselves as Mexican, Mexicano, Mexican American, or Chicano; and nearly one quarter (22.4%) described themselves as being of Puerto Rican descent. Of the remainder, 2.2% were categorized as being of Cuban descent (Cuban or Cuban American); 3.2% were of Central or South American background; and 8.7% were of other Hispanic origins. This categorization gives no information about race; those veterans of Hispanic origin can theoretically belong to any of the racial groups. Approximately one quarter of Hispanic era veterans were not born in the continental United States, with the majority of these (21.2%) citing Mexico, Puerto Rico, or Cuba as their birthplace.

For most statistical comparisons, the NVVRS investigators created a variable they called "race/ethnicity," which they derived by combining the information they had gathered from the survey's race and Hispanic origin questions. The three categories of this variable were "White/Other," "Black" (which is non-Hispanic Black), and "Hispanic." This introduces a confound in that the analyses do not disaggregate the effects of race from the effects of ethnicity for those veterans who are both Black and Hispanic. It may be true that the sociocultural effects of growing up in a place like Puerto Rico may override the effects of race, but this is a question that can be addressed empirically.

Nevertheless, it appears that the NVVRS investigators did a careful job in selecting a representative sample of prominent racial/ethnic groups. They did not solely ask respondents if they were "Hispanic" but followed up with queries about the specific ethnic subgroups to which the respondents belonged. The percentages of respondents in each subgroup (Mexican American, etc.) appear to be reflective of their relative numbers in the U.S. population.

If the group called "Hispanic" is made up of diverse subgroups, though, one might ask about the justification for clustering them together. As previously mentioned, 27.9% of male Hispanic theater veterans met the criteria for a current diagnosis of PTSD. When this group was broken down into subgroups, the PTSD prevalence rates were as follows: 28.9% for theater veterans of Mexican origin, 26.5% for those of Puerto Rican origin, and 21.5% for those of other Hispanic origin. These prevalence rates for Mexican Americans and Puerto Ricans, the

two primary Hispanic groups in the United States, were not significantly different from one another, nor were their rates significantly different from those of other Hispanic origin (though the power for detecting differences among these subgroups is lower).

How Was Language Dealt With?

A large number of Hispanics in the United States are bilingual, and although most of these individuals are probably adequately conversant in English, some may have difficulty with the language. There are also individuals who speak, read, and write only Spanish. In the NVVRS survey, many questions were read aloud to the respondents, requiring a spoken answer. There were also some paper-and-pencil questionnaires administered to participants in the NVVRS. A certain facility with spoken and written English would be required to complete the study. Could there have been a language barrier for some Hispanic respondents, such that they did not fully understand the questions they were being asked? Misinterpretation of items would introduce bias into the survey and could even affect the diagnosis of PTSD.

To address this concern, researchers developed a Spanish translation of the survey interview and included bilingual interviewers who could administer the interview in either English or Spanish. Participants were given the choice of either the English or the Spanish version, so that those who felt more comfortable with Spanish would be able to answer questions in that language. In actuality, only a handful of participants, most of whom lived in Puerto Rico at the time of the interview, chose to be interviewed in Spanish. In contrast, the clinical interview component, used to derive statistical decision rules for diagnosis, was only conducted in English; no translation was made available to respondents.

Within the survey interview, respondents were asked several questions about language with regard to abilities, preferences, and so on. Of the total sample of 3,016 (theater veterans, era veterans, and civilians), 15.2% indicated that they spoke Spanish, and 12.7% reported that Spanish was their first language as a child. The questions that followed were more pertinent to the comprehension issue: When asked, "Which language do you mostly speak?," only 1.7% of Hispanic respondents (n = 9) said they spoke only Spanish. An additional 12% of Hispanic respondents (n = 64) said they spoke mostly Spanish. Similarly, when asked which language they preferred, 4.5% of Hispanics (n = 24) responded that they prefer Spanish only, and 8.3% (n = 44) preferred to speak mostly Spanish.

With regard to reading ability, 15.3% of the Hispanic respondents sampled (n = 81) indicated that they read better in Spanish than in English. When asked if they could write in English, 19 individuals said no (3.6%). In addition, a total of 75 Hispanics, or 14.2%, said they write better in Spanish than in English. If one examines the responses to these language questions for theater veterans in particular, the percentages of respondents who chose Spanish were smaller than those for the whole sample in every case except for one: 19.5% of theater veterans indicated that they were able to speak Spanish.

In summary, differences between respondents in language use and fluency do not appear to have been a major obstacle. Language barriers appear to have existed for some NVVRS participants, but they were minimized by the decision to administer the survey interview in Spanish for those who expressed a preference for that language. Nevertheless, there is still the possibility that translating certain survey items into Spanish may have resulted in errors or more subtle alterations in meaning (e.g., ignoring specific cultural idioms for emotionally salient information). Of the 344 veterans who participated in the clinical interview component of the survey, which was only conducted in English, 85 were of Hispanic

origin. Applying the percentages derived from the total sample to these participants suggests that problems with comprehension were likely to affect only a handful, if any, and in no case did a clinical interviewer report apparent language problems. Therefore, we can find little evidence suggesting that the NVVRS was not representative of the majority of veterans who served in Vietnam, so one can assume that most Hispanic veterans were comfortable with the English language. In addition, all of the veterans had to have a basic competency in English to participate in military service.

Did Hispanics Have a Unique Reporting Style That Biased the Results?

An additional validity issue has to do with the reporting style of Hispanic veterans. It is possible that PTSD rates are not actually higher for Hispanics than for other ethnic groups, but that their style of responding to the survey questions may have inflated their scores (overreporting of symptoms, endorsing unusual items, etc.). Unfortunately, there is no direct empirical method of evaluating the possibility of a bias in reporting among Hispanic respondents (or any study participants) in the NVVRS data set, so this hypothesis cannot be tested. We nevertheless feel that it is important to speculate about a unique reporting style in Hispanics that may have influenced the severity of endorsement of PTSD symptoms. The issues discussed below are intended to provide a heuristic for future research in this area.

Overendorsement could be due, for example, to a need to receive recognition for service and psychological suffering. If some Hispanic veterans felt their contributions to the Vietnam war effort were not appreciated, they may have wanted to make people aware of the degree of adversity they faced. They may have overreported symptoms as a way of emphasizing their contributions and the resulting personal costs.

Although there is no direct way to test this hypothesis, some of the NVVRS data do reveal Hispanic veterans' perceptions of the degree of recognition and appreciation they received. Several survey questions tapped into how veterans felt when they returned to civilian life: Did the people at home offer them understanding and respect and help them to adjust and to feel proud of their service? Responses showed no differences between Hispanics' and other theater veterans' feelings about their reception when returning from Vietnam. Members of all ethnic groups were pleased on average with the welcome they received from family and friends, dissatisfied with their reception by noncombatant U.S. citizens, and neutral to dissatisfied with other aspects of their homecoming.

Comorbid psychiatric conditions may have uniquely influenced the reporting of PTSD symptoms in Hispanic veterans. Hispanics were shown to have greater substance abuse and dependence problems and higher rates of general anxiety disorder compared with other ethnic groups (see *Prevalence of Other [Non-PTSD] Psychiatric Disorders* section below). Those veterans who have such difficulties may have felt the need to attribute current symptoms of other disorders and problems in living to "Vietnam," when in fact there might be other causes (e.g., biological predisposition or current life stress). As with reporting issues in general, there is no way of evaluating the possibility of a bias in attribution of psychiatric conditions among Hispanic respondents, so this hypothesis cannot be tested.

Cultural differences between ethnic groups also may have contributed to the reporting style of Hispanic veterans. An overendorsing reporting style, however, seems inconsistent with descriptions of Hispanics as more stoic and noncomplaining (Becerra, 1982; Hough, Canino, Abueg, & Gusman, 1996; Marsella, Chemtob, & Hamada, 1990). On the other hand, Shrout et al. (1992) mentioned cultural and religious norms among Hispanics that may tolerate certain kinds of complaints that may not be as well tolerated in the Anglo American so-

ciety. Symptoms of such culturally specific syndromes as *ataques de nervios* among Puerto Ricans (Guarnaccia, Rubio-Stipec, & Canino, 1989) may be confounded with some PTSD symptoms.

Ataque de nervios is a culturally condoned expression of distress seen in Hispanics (especially Puerto Ricans and Dominicans) in response to acute stress. It is more commonly seen in low-income women, but *ataques* are also used by some men to express their distress (Guarnaccia, Canino, Rubio-Stipec, & Bravo, 1993). Although there are many variations to an *ataque*, its prototype consists of the following: an overriding sense of loss of control; a threat to the person's social order; emotions of sadness and anger; and expressions of distress in the form of physical symptoms, aggressive outbursts, and loss of consciousness (Guarnaccia, Rivera, Franco, & Neighbors, 1996). *Ataque* symptoms of anger, assaultiveness, and agitation are similar to some of the hyperarousal symptoms of PTSD, whereas change in level of consciousness and visual hallucinations seen in *ataque* are similar to the dissociative aspects of PTSD, such as flashbacks. The selective amnesia that is often seen is similar to the symptom of having difficulty remembering aspects of one's trauma, and the fear or anxiety of an *ataque* is similar to the strong emotions that result from reexperiencing in PTSD. How does a person understand these symptoms? What do they mean to the individual? For some, they may be understood as idioms of distress, or culturally accepted ways of drawing attention to and commenting on one's personal or social difficulties (Kirmayer, 1996). For others, the symptoms may be indicative of more serious problems. Hispanics may have construed some of the NVVRS survey questions that tapped into PTSD in a way that influenced the rates of the disorder. Nevertheless, even if the respondents were actually reporting symptoms of *ataque*, they may not have been *over*reporting: *Ataque de nervios* may be their way of expressing a true, painful posttraumatic response.

The higher rates of somatization disorder reported among island Puerto Ricans compared with residents of the mainland United States (Canino et al., 1987; Shrout et al., 1992) are another example of a cultural variation in reporting of distress. Similarly, in psychiatric epidemiology research in New York City in the 1950s and 1960s, Puerto Ricans were found to report the highest number of symptoms of any of the ethnic groups in the sample. Later findings (Canino et al., 1987) have demonstrated few differences in actual prevalence of psychiatric disorders among Puerto Ricans compared with U.S. residents, so it appeared that the Puerto Rican respondents were demonstrating a cultural pattern of expressing psychosocial distress.

One hypothesis that has been offered to explain this response pattern is that the symptoms in the New York survey were psychosomatic ones, which fit with the cultural category of *nervios*, another Hispanic idiom of distress (Guarnaccia et al., 1989). *Nervios* consists of more chronic and low-grade symptoms than those of the *ataque de nervios*. The somatic symptoms in the survey fit with the culturally recognizable and socially acceptable category of *nervios*, so they were responded to in a positive manner. As these examples suggest, the effect of Hispanic culture on reporting of symptoms appears complex, and future research efforts should be mindful of its possible influence.

The NVVRS investigators appear to have carefully selected their sample and attended to a number of factors that could have weakened the validity of their findings. We examined a number of these possible influences and found no clear evidence of actual influence. One factor that we could not investigate owing to method limitations was the influence of reporting style on responding; however, the possibility of under- and overreporting is not unique to Hispanics and may have affected the responses of other ethnic groups as well. Although sensitive to this possibility, we now make the assumption that the higher rate of PTSD among Hispanics is a valid difference, and we shift to an exploration of why this might be so.

Did Factors in the War Zone Contribute to Hispanic Veterans' Higher Rates of PTSD?

For Hispanics, specific experiences in the war zone may have contributed to elevated PTSD rates. In addition to the everyday stressors of life in a war zone and the specific combat traumas experienced by many soldiers in Vietnam, soldiers of color often had to endure the additional stress of racism. Marsella et al. (1990) suggested that minority soldiers experienced increased stress in Vietnam as a result of several factors: They perceived themselves as being stereotyped and ridiculed because of their race and as having received unequal treatment; they were sent to the war by what many felt was a racist country, to fight non-White people; they perceived themselves as less able to dehumanize the Vietnamese because the enemy reminded many of family and friends; and minority soldiers' ways of relating to others often did not fit in with military preferences (Marsella, Friedman, & Spain, 1996).

Similarly, Loo (1994) presented a conceptual framework to aid in the understanding of what she called race-related trauma among Vietnam veterans. Although the race-related stressors she postulated are meant to apply to Asian Americans, most could also apply to Hispanic veterans, given their similarity of skin color, hair color, body type, and height. They include being mistaken for Vietnamese, verbal and physical assaults that were race/ethnicity related, death and near-death experiences that were race/ethnicity related, racial stigmatization, dissociation from one's racial/ethnic identity, and marginalization. As previously reported, Hispanic and African American soldiers in Vietnam were exposed to higher levels of war-zone stress than Whites/others. Perhaps Hispanics' size and racial similarity to the enemy led to their being given more dangerous assignments, such as tunnel rat or point, as were some Asian Americans (Loo, 1994).

NVVRS respondents of color were asked several questions about their experiences of discrimination in Vietnam, some which parallel the factors mentioned by Marsella et al. (1990, 1996) and Loo (1994): Did they think that they were assigned to duty in the Vietnam arena, ever demoted or denied promotion, given unpleasant duty assignments, given dangerous duty assignments, or treated unfairly or badly in any other ways while they were in (or around) Vietnam because they were Black or Hispanic?

On average, 11% of Hispanic theater veterans responded in the affirmative to these questions about discrimination, from 7.3% who felt they were given dangerous duty in Vietnam because of their race/ethnicity to 13.9% who said they were demoted or denied promotion in the war zone because of their race/ethnicity. Significantly more Black veterans felt they had been the victims of discrimination than Hispanics, however: An average of 26% of Black theater veterans responded yes to these questions.

Although fewer Hispanic veterans than African Americans reported suffering from the effects of racism in the war zone, perhaps the experience of discrimination had a more profound effect on those Hispanics who were exposed to it than it had on African Americans. In general, controlling for war-zone exposure, veterans of color who reported that they had been discriminated against in Vietnam reported significantly more current PTSD symptoms in the survey interview than did those who did not report discrimination. With regard to differences between ethnic minority veterans, those Hispanics who reported that they were assigned to Vietnam because of their ethnicity reported more severe PTSD symptoms, as indexed by the Mississippi Scale for Combat-Related PTSD (M-PTSD; Keane, Caddell, & Taylor, 1988), than Blacks ($M = 92.0$ vs. $M = 82.3$), $F(1, 572) = 4.54$, $p < .05$. Similarly, Hispanic theater veterans who indicated that there were other ways they were treated unfairly in Vietnam because of their ethnic background reported more severe PTSD symptoms as indexed by the M-PTSD than Black veterans who endorsed this item ($M = 92.1$ vs. $M = 80.7$), $F(1, 571) = 6.10$, $p < .05$. The perception of unfair treatment based on race/ethnicity seemed to have a greater

negative effect on Hispanics than on African Americans. Hamada and colleagues (Hamada, Chemtob, Sautner, & Sato, 1988) and Loo (1994; Loo, Singh, Scurfield, & Kilauano, 1998) have stated that negative race-related events can serve as additive stress over and above the effects of combat exposure on PTSD. Although they forward this idea in regard to Asian Americans, this same "race-related additive stress hypothesis" appears potentially applicable to Hispanics.

Being torn from one's cultural milieu and separated from friends and family would be stressful for any soldier, but it may have been more so for the soldier of color, especially the Hispanic soldier. The more marked the cultural differences between home and this new context for the Hispanic soldier, and the fewer opportunities for social support and cohesion, the greater would be his resulting alienation. Alienation may moderate the relationship between warzone stress and PTSD. Because of the practice of rotating individual soldiers in and out of Vietnam, few soldiers had the luxury of strong group cohesion. Despite this fact, the White soldier had the advantage of being surrounded by others who resembled him (at least partially) in appearance, cultural beliefs, and practices. African American soldiers were targets of the same discrimination as Hispanics, but they had a better chance of being placed in units with other members of their ethnic group because of the greater absolute number of African Americans in the military. Most Hispanic soldiers had none of these advantages. The NVVRS data showed that units varied in racial/ethnic makeup depending on the ethnicity of the soldier: Whites tended to serve with more Whites as opposed to soldiers of other ethnic backgrounds, African Americans with more African Americans, and Hispanics with more Hispanics. Even so, African Americans reported having served with an average of 34.8% African American soldiers in their units, whereas Hispanics reported having served with only 15.9% Hispanics, on average.

Several questions in the NVVRS survey interview addressed issues of unit cohesion. Theater veterans of different ethnic backgrounds did not differ with regard to the number of different units in which they served, how long they were in a particular unit, their opinions about the competency of the people in charge of their unit, or how close they were to people in their unit. Hispanics did differ from White/other and Black veterans on their evaluation of the concern of other soldiers in their unit and in how often they felt understood, which may reflect greater alienation on their part. When asked how many of the people he served with in his unit were the kind who looked out for the welfare of others, the average male theater veteran responded that somewhere between half and most were concerned for others. Hispanic veterans were less positive: They felt that fewer of their fellow soldiers looked out for others' welfare, compared with Black veterans (mean difference = .217, $p < .05$). Hispanics also reported serving with fewer concerned soldiers than did White/other veterans, but the difference was not statistically reliable. Theater veterans were also asked, "How often did you feel that members of your unit understood you and your problems while in (or around) Vietnam?" Although the average theater veteran felt that fellow soldiers understood him between "sometimes" and "often" in frequency, Hispanics felt understood by fellow soldiers significantly less often than did their White/other counterparts (mean difference = .192, $p < .05$). They also felt less understood than did Black veterans, although this difference was not statistically reliable. Hispanic veterans were no more or less likely to trust the people with whom they served than were Black or White/other veterans.

Might Other Postwar Adjustment Problems and Life Stressors Be More Prevalent Among Hispanics?

Perhaps Hispanic veterans experienced more difficulties in their lives after returning from Vietnam than did veterans of other ethnic backgrounds. They may have been

exposed to more life stressors such as racism, urban violence, and poverty, and those who struggled to cope with these stressful conditions may have been more likely to suffer from psychiatric distress. As a consequence, Hispanics may have experienced more overall distress than did others, and this distress may exacerbate underlying PTSD problems. If this were so, one would predict that their pattern of symptoms on measures of PTSD would differ from that of other ethnic groups.

For example, suppose two soldiers were exposed to the same profile of war-zone stressors while in Vietnam. Suppose further that neither one developed PTSD immediately after this exposure, but on return to civilian life, one veteran had a series of success experiences whereas the other was faced with a number of very stressful life events or other readjustment problems. When surveyed, the two veterans would report similar criterion "A" events (specific combat trauma). The first veteran might not report enough symptoms to meet the diagnostic criteria for PTSD, but the second might endorse a number of symptoms of general distress (increased arousal and emotional numbing) and so pass the threshold for PTSD diagnosis. In this case, even though he was exposed to combat trauma, his nonspecific PTSD symptoms that contribute to diagnosis may not stem fully from that event but from other general stressors in his postmilitary experience. The symptoms he endorsed, although falling under the category of PTSD, may not have been tied directly to his combat trauma.

Were there higher levels of other psychiatric distress, comorbid psychiatric disorders, other postmilitary adjustment problems, or greater current life stressors on average for Hispanic theater veterans? The NVVRS data set provides information on ethnic group differences for these factors.

Prevalence of Other (Non-PTSD) Psychiatric Disorders

The NVVRS survey interview assessed levels of nonspecific distress, and the prevalence of nine specific psychiatric disorders (other than PTSD) as measured by the Diagnostic Interview Schedule, among study respondents. These disorders included major depressive episode, manic episode, dysthymia, obsessive–compulsive disorder, panic disorder, generalized anxiety disorder, alcohol abuse or dependence, drug abuse or dependence, and antisocial personality disorder. Both current (within the last 6 months) and lifetime rates of each disorder were determined. Ethnic comparisons were made for theater veterans, and those disorders for which Hispanics showed greater prevalence than other ethnic groups are listed below.

ANXIETY DISORDERS. Although there was a significantly higher rate of *lifetime* generalized anxiety disorder (GAD) among Hispanic theater veterans than among Whites/others (lifetime GAD: Hispanics, 22.4%; Blacks, 17.2%; and Whites/others, 13.2%), it is unclear how this might influence the differential reporting of current PTSD symptoms. Rates for current GAD did not differ significantly between ethnic groups, although Hispanics did exhibit a higher rate than did Blacks and Whites/others (current GAD: Hispanics, 8.1%; Blacks, 6.1%; and Whites/others, 4.1%). Rates for panic disorder and obsessive–compulsive disorder were too low to make adequate comparisons between groups.

SUBSTANCE ABUSE/DEPENDENCE. Once again, Hispanic theater veterans had significantly higher rates of *lifetime* alcohol abuse or dependence than did Blacks or Whites/others (Hispanics, 50.1%; Blacks, 35.8%; and Whites/others, 38.9%). Hispanics also had higher current rates of the disorder than the other two ethnic groups, but the difference was not statistically significant (Hispanics, 15.2%; Blacks, 11.7%; and Whites/others, 10.9%). The results were similar for drug abuse or dependence, with Hispanics showing higher rates than Blacks and Whites/others, both currently and over the lifetime, but with group differences failing to reach statistical significance.

PREVALENCE OF ANY PSYCHIATRIC DISORDER, WITH OR WITHOUT ALCOHOL DISORDER. In general, Hispanic theater veterans had rates of these various disorders, combined, that were 10% to 15% higher than rates for Blacks or Whites/others, whether or not alcohol disorders were included in the analysis. For Hispanics, the prevalence rates for any disorder (including alcohol) were 66.5% lifetime and 25.7% current. For those Hispanics who faced high war-zone stress, the rates were 71.8% lifetime and 43.2% current. The NVVRS authors concluded that being a Hispanic male theater veteran significantly increased one's rates of disorder, whereas being African American did not.

Prevalence of Comorbid Psychiatric Disorders

Although Hispanic Vietnam veterans appear to suffer from more psychiatric problems than veterans of other ethnic backgrounds, the NVVRS results did not report whether Hispanic veterans *with PTSD* have more comorbid disorders than other veterans with PTSD (NVVRS comorbidity results were reported only for all theater veterans, not for the race/ethnicity subgroups). In order for other mental health problems to serve as a contributing factor in Hispanic veterans' elevated PTSD rates, comorbidity would have to be higher in this ethnic group, not just general rates of psychiatric disorders. We made statistical comparisons of comorbidity rates between ethnic groups for current PTSD and all nine of the psychiatric disorders listed above, using chi-square analyses. No significant ethnic differences in comorbidity emerged.

Other Postmilitary Readjustment Problems

The NVVRS examined a broad array of current readjustment variables among veterans: financial and work status, education, career, marital and family functioning, and life satisfaction. Also, the survey explored problems with readjustment such as homelessness, isolation and loneliness, violence, and involvement with the criminal justice system.

The one realm in which Hispanic veterans were significantly different from both White/others and Blacks was education. Hispanic theater veterans were somewhat better educated than were White/other veterans at the time of the interview and significantly more educated than Black veterans. Hispanic male theater veterans who graduated from high school before they served in the military were significantly more likely than Black or White/other men entering military service with high school diplomas to have continued their education (75% for Hispanics, 52% for Blacks, and 47% for Whites/others). Because education level and intelligence are negatively correlated with PTSD in veterans, this finding suggests at the minimum that Hispanics were not at greater risk as a result of education level (McNally & Shin, 1995).

Hispanics were not significantly different from both of the other ethnic groups with regard to the other readjustment variables studied. In general, veterans of color were more likely to be experiencing current life problems than were nonminority veterans. On the positive side, Hispanic theater veterans tended to be employed and to have furthered their education, and they tended to be married. On the negative side, they tended to experience more readjustment difficulties, their marriages tended to have more problems, and they tended to experience reduced well-being and to engage in more violent acts in comparison with White/other veterans. These were problems they shared with Black theater veterans, so these life difficulties were not unique to being Hispanic but seemed to be associated with minority status. These current readjustment problems are therefore unlikely to account for differential rates of PTSD in Hispanics.

Stressful Life Events and Noncombat Trauma

Hispanics do not appear to have been uniquely subject to readjustment difficulties,

but what about particular stressful life events? If they have been exposed to more of these events than have veterans of other ethnic backgrounds, they may experience more PTSD symptoms partially as a result of this elevated exposure. NVVRS participants were asked specific questions about stressful life events they experienced during the past year and the number and nature of traumatic events they had experienced over their lifetime. Hispanic theater veterans did not report a greater number of life stressors over the course of the past year than Blacks or White/others. Hispanic theater veterans were also no more prone to have experienced non-combat-related traumas (e.g., assaults or accidents) over the lifetime than veterans of other ethnic backgrounds. Although there were some Hispanic theater veterans who had PTSD from causes other than combat, their numbers were not significantly higher than those from other ethnic groups.

These results are similar to those found by Fontana and Rosenheck (1994) in their attempt to build a causal model of PTSD among combat veterans using the NVVRS data. They reported that Black veterans experienced fewer traumas postmilitarily than did other veterans, and that postmilitary traumas contributed significantly to the development of PTSD. Although they noted that Hispanic veterans were more prone to develop PTSD than other veterans, this effect was not mediated by any of the other variables in their model, which suggests that postmilitary traumas were not a factor in Hispanics' higher PTSD rates.

Could the Higher PTSD Prevalence Be Due to Less Mental Health Treatment?

Might Hispanics be more at risk for PTSD because they were less likely to have received mental health treatment? Lower rates of mental health service seeking may have contributed to greater PTSD symptomatology in Hispanics compared with other ethnic groups. Minority veterans were less likely to use formal mental health services than nonminorities even after adjusting for different levels of need (Rosenheck & Fontana, 1994). When the researchers divided the Hispanic group into subgroups, the finding held true for Blacks and Mexican Hispanics specifically. These two ethnic groups were less likely to use self-help groups as well (the groups, in order from least to greatest utilization, were Black, then Mexican, then Puerto Rican, then White/other).

Despite their lower utilization of non–Veteran's Administration (VA) services, veterans of color were just as likely to use VA mental health services as were nonminority veterans. It appears, then, that Hispanic veterans were making efforts to cope by receiving help for mental health problems in the VA system. Outside of VA services, Blacks and Mexican Americans were less likely to seek help, but Puerto Ricans did not appear hesitant to use non-VA services. These findings highlight the heterogeneity of the Hispanic group: One cannot assume that all Hispanics will behave similarly on any one measure. This global index of utilization does not indicate whether their PTSD was specifically targeted or not and whether there was positive treatment outcome. In addition, it is unclear whether the quality of care meets the unique needs of the Hispanic veteran.

Might Subconstructs Within a Global PTSD Syndrome Shed Light on the Difficulties of Hispanics?

In addition to their elevated rates of current PTSD, Hispanic veterans who served in Vietnam appeared to be suffering from a greater number of current stressors, psychiatric problems, and problems in living than did their White/other counterparts, and for some difficulties, than their Black fellow veterans. As a result, those symptoms of PTSD that are measures of nonspecific distress or dysphoria (i.e., hyperarousal and emotional

numbing) should be more frequently endorsed among Hispanics, if their lives are in greater disarray. In contrast, one would not expect Hispanics to differ from veterans of other ethnic backgrounds on symptoms that are referenced specifically to war-zone experiences (i.e., reexperiencing and avoidance symptoms). Unfortunately, the NVVRS data set is not designed to allow for a reliable analysis of the differential reporting of Hispanics versus other racial/ethnic groups on specific clusters of PTSD symptoms as defined in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994).

Conclusions and Recommendations

We began by examining a variety of methodological issues that might have artificially inflated the NVVRS estimate of PTSD prevalence among Hispanic Vietnam veterans and could not find convincing evidence of their influence on the PTSD prevalence findings. We attribute this to the careful and thorough approach taken by the NVVRS investigators: care in sampling, sensitivity to language issues, and examination of a wide array of pre- and postmilitary factors. On the basis of NVVRS data, it appears that Hispanic veterans of the Vietnam conflict do have higher rates of PTSD than do veterans of other racial/ethnic backgrounds. Controlling for preexposure characteristics and combat exposure reduces the magnitude of this difference between Hispanics and others. Nevertheless, as Frueh et al. (1998) stated:

> That these factors are accounting for some of the racial differences does not eliminate the fact that groups differ. Therefore, while such findings do not support a racial genetic predisposition to PTSD, they do suggest that factors associated with race (sometimes referred to as "socio-cultural influences") are important. (p. 300)

Indeed, it seems unlikely that Hispanics are somehow more biologically predisposed to respond to war-zone stress with PTSD, but that does not preclude the possibility of unique environmental stressors leading to a worse experience for this ethnic group. Unanswered questions remain about possible response biases, the effects of race-based discrimination and mistreatment, trauma-specific symptoms versus those of more general distress, the effects of immigration and acculturation, the effectiveness of efforts to cope with stress and trauma, and the influence of culture on PTSD. As Hough et al. (1996) noted: "all the aspects of . . . vulnerability that might produce higher rates of PTSD in Hispanic Vietnam veterans may not have been effectively identified and measured in [the NVVRS] study" (p. 320). These possible influences will need to be explored systematically through future research efforts.

Perhaps the vulnerability of Hispanic veterans to PTSD was unique to the Vietnam war, and the culture of that war. For example, African American soldiers were faced with the stress of racism as well, but they may have felt more efficacious, and indeed empowered by the Civil Rights movement and the "Black Power" movement, both of which were in full swing in the United States during the Vietnam era. Similar movements did not reach full strength in Hispanic communities until later. Experiences of racial/ethnic discrimination and alienation in the war zone seem to have affected Hispanic soldiers more powerfully than African Americans. Finally, the physical similarities between Hispanics and the Vietnamese may have led to their being singled out for dangerous duties and also may have led to Hispanics' inability to dehumanize the enemy (e.g., Marsella et al., 1996).

The United States military has changed since the Vietnam era (as has U.S. society as a whole), in part due to lessons learned from that conflict. There is greater sensitivity to issues of race and ethnicity, and there are greater numbers of ethnic minorities in the military and in positions of command. As a consequence, some of the factors that may have contributed to higher rates of

PTSD in minority Vietnam veterans may be less prevalent in the current military environment. For instance, overtly racist and inequitable treatment is less likely to be tolerated. Because of the growing numbers of Hispanics in the United States, Hispanic soldiers are probably less likely to be the only ones in their units, so they may not feel as alienated. Social movements in the years since the Vietnam war have brought a greater sense of solidarity and ethnic pride to Hispanics, so they may feel more efficacious, resourceful, and entitled to fair treatment when faced with stressful situations than they might have in the past. However, these changes are by no means certain in any particular instance. It is clear that racial and ethnic tensions and divisiveness are still very active in U.S. culture, in civilian and military environments, despite the positive changes that have taken place in the 30 or so years since the Vietnam conflict.

Nevertheless, even if today's Hispanic soldier is no longer at elevated risk for trauma-related disorders, there are still disproportionate numbers of Vietnam-era Hispanic veterans who require relief from their debilitating symptoms. Just as one would carefully explore veterans' combat histories, providers and researchers need to take equal care to evaluate experiences of alienation and race-related trauma in these veterans when they present for treatment.

Alternatively, it is possible that Hispanics continue to be at higher risk for PTSD than other ethnic groups when exposed to the stresses of combat and the war zone. A study of Persian Gulf troops by Sutker, Davis, Uddo, and Ditta (1995) revealed a tendency for minority troops to report more psychological distress and PTSD symptoms than their nonminority peers. This result may suggest the continued vulnerability of Hispanics, but it is not possible to know for certain, because the researchers reported that the number of participants was too small to make interethnic comparisons. In addition, neither preexisting conditions nor prior trauma was controlled for in the analyses (Frueh et al., 1998).

If it is true that Hispanics will develop PTSD at higher rates than individuals of other ethnic backgrounds, all other things being equal, perhaps this is due to sociocultural differences in emotional processing and coping with extreme stress. For example, Hough et al. (1996) cited descriptions of Mexican men as resigned, stoic, and indifferent to suffering. They postulated that men from the Mexican cultural background may possibly normalize stress. A stoic attitude may be quite adaptive when dealing with day-to-day chronic stressors that some Hispanics experience living in the United States, such as poor living conditions, degradation, and racism. It is plausible, however, that exposure to extreme life threat in the war zone requires a different way of coping, rendering stoicism ineffective. In the process of recovery, those veterans who are stoic and determined to handle their problems on their own may find themselves confronted with memories of trauma that evoke feelings of fear, sadness, and anger. Self-disclosure and emotional processing are known to aid in recovery from traumatic stress, so those who withdraw, keeping trauma-related thoughts and feelings inside and avoiding sharing them with others, run the risk of developing PTSD with chronic and intense symptoms (e.g., Pennebaker, Barger, & Tiebout, 1989).

Perhaps Hispanic veterans had insufficient outlets to express their emotions regarding the traumas to which they had been exposed. Alternatively, they may have had difficulty giving voice to these feelings: Hough et al. (1996) mentioned that alexithymia may be more common in Hispanic men. These are important research questions: If these characteristics are found to be unique to Hispanics, they would be at heightened risk from future exposure to combat or other trauma.

A related sociocultural influence on coping with stress is fatalism. Seligman's theory of learned helplessness (e.g., Peterson, Maier, & Seligman, 1993) may offer a way of conceptualizing the contribution of a fatalistic attitude to the development of a disor-

der such as PTSD. Learned helplessness results from the experience of a number of painful, stressful life events that are noncontingent and unpredictable. People who have these life events find that their responses make very little difference to the unavoidable negative outcomes they experience. This learned helplessness—a combination of negative self-efficacy expectations and negative outcome expectations ("Bad things will happen to me and there is nothing I can do about them")—can lead, in turn, to demoralization, depression, and increased vulnerability to the negative effects of trauma. Learned helplessness is a trait that some individuals bring with them to the war zone, based on their life experience, which can profoundly impact how war-zone events are coped with (e.g., passively, with minimal resourcefulness). This predisposition is not limited to those of Hispanic background: Anyone who has a history of stressors such as very low socioeconomic status or childhood trauma may be susceptible to learned helplessness.

Members of a culture can also pass on learned helplessness in the form of fatalism, through collective knowledge, modeling of family members, and so on. Hispanic culture is known for its fatalistic orientation, that of passively denying personal control (e.g., Neff & Hoppe, 1993). In traditional Hispanic communities, such attitudes are not maladaptive because the individual has close family and community ties as well as strong religious beliefs to offer support. Hispanic immigrants to the United States, a more individualistic and less religious culture, have lost some of these supports and are often faced with economic hardship and discrimination. For such individuals, the combination of culturally based fatalistic attitudes and repeated negative life experiences may engender a particularly strong form of vulnerability to severe trauma. Hispanic soldiers who were faced with extreme and uncontrollable war-zone trauma may have been at greater risk for PTSD because of such a confluence of learned helplessness. In addition, some Hispanic soldiers of the Vietnam era who entered the military with this combination of factors encountered mistreatment and disrespect because of their ethnic/racial background, further taxing their ability to cope.

Probably the most significant weakness in the NVVRS with respect to these issues is its retrospective and cross-sectional design. That is, all of the NVVRS measures were taken at a single time point, long after the war, which limits substantially our ability to make causal inferences. Future studies must be done prospectively. Additionally, they should focus on the influence of one's ethnocultural heritage on emotional expression and coping with stress and trauma. Possible protective factors related to Hispanic ethnic background, such as strong family ties and social supports, should also be explored.

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