

POSTTRAUMATIC STRESS DISORDER AMONG VIETNAMESE WAR VETERANS LIVING IN VIETNAM

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ABSTRACT

There appears to be a lot of researches studying Posttraumatic Stress Disorder (PTSD) among American veterans of the Vietnam-America war, yet, there is no information available on PTSD among Vietnamese veterans. This study investigated PTSD and other psychological symptoms among Vietnamese veterans of the Vietnam-America war. Participants were one hundred sixty nine (mean age = 63.5) former soldiers in the North Vietnamese Army (NVA) who currently live in Nha Trang city, Vietnam. Questionnaires used in this study assessed demographics, war zone exposure (WZE), combat roles (CR), combat exposure (CE), and included the Impact of Events Scale – Revised (IES-R) (1), Peri-Traumatic Dissociation Experiences Questionnaire (PDEQ) (2), Symptoms Checklist 90 Revised (SCL-90-R) (3), Trauma Symptoms Inventory (TSI) (4), and a DSM-IV-TR PTSD measure of symptoms in the context of war experiences. Results indicated that 19.5% of Vietnamese veterans in this sample had probable PTSD, which was defined by meeting the minimal DSM-IV-TR PTSD diagnostic criterion (5). Independent t-tests indicated that the levels of war-related stress symptoms among Vietnamese veterans were significantly lower than those reported for American and Australian veterans as reported in the literature. Pearson correlation coefficients showed that the levels of PTSD and other psychological symptoms correlated significantly with war-related stressors among Vietnamese veterans. The factors which resulted in the differences in symptoms levels between Vietnamese veterans and American and Australian veterans are also discussed.

INTRODUCTION

The United States officially began direct involvement in the Vietnam - American war on August 5, 1964. On May 7, 1975, President Gerald R. Ford officially proclaimed an end to the “Vietnam era”. To the American government and people, it probably meant that it was over. But it was not over. The soldiers in all countries involved in the war continued to struggle with post-war psychological problems resulting from their war experiences and from readjustment to civilian life. According to researchers, the veterans of that war were viewed as presenting special problems in readjusting to post-war society.

Prevalence of PTSD

As part of the Epidemiologic Catchment Area Survey, Helzer, Robins, and McEvoy (1987) found a one percent rate of PTSD in the total population, 3.5 percent in civilians exposed to physical attack and in Vietnam veterans who had not been wounded in war, and 20 percent in veterans wounded in Vietnam (6). The Center for Disease Control’s Vietnam Experience Study (VES, 1988) found that about 15% of Vietnam veterans had a lifetime diagnosis of PTSD and that 2.2% had the disorder during the month before the examination (7).

In order to establish the prevalence and incidence of PTSD and other psychological problems in readjusting to civilian life among Vietnam veterans, Kulka et al. conducted the National Vietnam Veterans Readjustment Study (NVVRS), from 1983 through 1988, and found that 15.2% of the male veterans and 8.5 percent of the female veterans are currently suffering as clinical cases of PTSD. Another 11.1 percent of male and 7.8 percent of female veterans suffer from PTSD symptoms that adversely affect their lives but are not of the intensity or breadth required for a diagnosis of PTSD. The NVVRS also indicated that the lifetime prevalence of PTSD is 30.9 percent among male veterans and 26.9 percent among females. The lifetime prevalence of partial PTSD among male veterans is 22.5 percent and among female veterans 21.2 percent (8).

According to some researchers, the reason why the rate of PTSD is high among Vietnam veterans is the uniqueness of the Vietnam-America war. King and King (1991) wrote:

The war itself has been judged unique in several ways. First, it lasted longer than any previous war involving American troops. Second, American military

personnel were not deployed to the combat area in intact units, but rather on an individual rotational basis with an explicit time frame of 13 months for Marines and 12 months for all other services. Third, there were no clearly discernible lines of battle. Instead, guerilla tactics predominated, and danger was perceived as being everywhere. Fourth, the entire purpose of the American involvement in Southeast Asia was never made clear, either to the personnel who fought the war or to the American public. Fifth, and finally, the Vietnam war came to be highly unpopular, and returning veterans were greeted with very little support and in many cases contempt (p. 107) (9).

Trauma Model of Factors Related to PTSD

Researchers have attempted to construct a model to account for the factors related to the possibilities of PTSD developing among Vietnam veterans. They have identified the following factors: 1) pre-military factors (e.g., childhood antisocial behavior, age at the time entering military, previous trauma history, personality, and ethnicity); 2) military experience (e.g., combat exposure, participation in abusive violence, exposure to abusive violence, and injury in the war); and 3) social support upon coming home.

Some investigators strongly endorsed pre-military factors such as school difficulties, behavioral problems, adjustment problems in children or adolescent, childhood physical abuse, personality (6, 8, 10, 11,12, 13, 14, 15, 16); those who strongly supported the causal role of combat exposure (17, 18); those who concluded that both pre-military and military history contributed significantly to levels of veteran functioning (19, 20); and those who proposed that post-military social support was a powerful moderating influence on present veteran status (21, 22, 23, 24, 25, 26, 27); those who proposed that both combat exposure and social support were mutually related to PTSD symptoms (24, 28, 29); and those who found that all factors were related to post-war psychosocial problems (30, 31, 32, 33).

Do Vietnamese veterans suffer any war related stress symptoms? If so, what patterns of stress symptoms do they have? How are their symptoms different from those of American veterans? And what is the basis of those differences? Do the facts that the ideology of being “Uncle Ho’s” soldier; the belief of fighting for a just war; the conviction of victory; and recognition by the Vietnamese people and government play significant roles in those differences?

This research interviewed Vietnamese veterans who were soldiers in the North Vietnam Army during the Vietnam-America war. The term “Vietnamese veteran” will be used hereafter as indicating the soldiers of the Northern Vietnam Army (NVA) in the Vietnam-America war.

The hypotheses of the present study are: 1) Vietnamese veterans of the Vietnam-America war suffer war-related stress symptoms of PTSD; 2) there exist significantly lower levels of war-related stress symptoms in Vietnamese veterans than in American and Australian veterans; and 3) the levels of PTSD and other psychological symptoms would correlate with war-related stress among Vietnamese veterans.

METHOD

Sample

Participants were volunteers from those veterans who were contacted through the Associations of Veterans Club. Participants consisted of 169 Vietnamese veterans (143 males (84.6%), 22 females (13.0%), 4 unidentified (2.4%)) living in three districts which have the largest numbers of veterans in Nha Trang city, Vietnam. Ages ranged from 41 to 83, with a mean age of 63.52, and a standard deviation of 9.918.

Instruments

Demographic Survey

History of Vietnam-America War Experiences

SCL-90 R Scale (3)

Impact of Event Scale – Revised (IES-R) (1)

Peri-Traumatic Dissociation Experiences Questionnaire (PDEQ) (2)

Dangerous Situations in the Vietnam-America War

Military Experiences in the Vietnam-America War

Trauma Symptoms Inventory (TSI) (4)

The Vietnam-America War: Your Personal Feelings

Procedure

The researcher translated all of the questionnaires from English into Vietnamese in consultation with Dr. John P. Wilson, a well-known expert on PTSD. Those translations were double-checked by an American who has been studying Vietnamese for over ten years and back-translated by a Vietnamese-American who has been living in the United States for 31 years.

The sample interview took place from June 15th to July 31st, 2004 in Nha Trang, Vietnam. After having being approved by local authorities to do research among Vietnamese veterans, the researcher discussed with leaders of three Associations of Veterans in three districts in Nha Trang to determine a process to carry out the research. After having screened the lists of Vietnamese veterans which were available in each district to select appropriate soldiers, about two hundred invitation letters were sent to prospective participants. The letters explained briefly that the aim of the study was to investigate and understand the impact of the Vietnam-America war on psychological aspects of Vietnamese veterans. Due to time limits the researcher could not interview veterans on a one-to-one basis in a private office. Instead groups of ten or more veterans at a time, in a hall, responded to the questionnaires. Participants were told that the primary purpose of the study was to gather their perceptions of experiences in the Vietnam-America war and learn about the effects of the war experiences on the course of their lives; and that researchers were interested in learning how individuals adapt to difficult and stressful wartime experiences. All information would be anonymous. Participants were asked not to put their name on any of the materials. Researcher stressed that their testimony about the Vietnam-America war and its aftermath was very important and meaningful for future generations. During the collective interviews, the researcher explained the instructions and read each item aloud and waited until each veteran finished the item then moved to the next item. Four collective interviews yielded a sample of 169 Vietnamese veterans.

In the process of administrating the interviews, there were some terms which seemed to be new or not easy for the participations to understand. There were times they did not understand what they were asked. This happened more often with the IES-R, SCL-90-R and PDEQ than with other scales. The reasons for that perplexity are the jargon, and/or abstractness of the wordings, for instance “on-guard”, “blank out”, or “space out”. The researcher was always available to explain the items and questions by the participants.

RESULTS

Results of Tests of Hypotheses

There were three independent measures of PTSD: IES-R, DSM-IV-TR-PTSD in context questionnaire, and the TSI.

Hypothesis 1. It was predicted that some Vietnamese veterans of the Vietnam-America war would suffer war-related stress symptoms of PTSD. To test hypothesis 1, several steps were carried out:

First, probable PTSD (P-PTSD) and non-probable PTSD (N-PTSD) cases on the IES-R were identified using DSM-IV-TR minimal algorithmic criteria. To be classified as a P-PTSD case the respondent must endorse at least one intrusion item (items 1, 2, 3, 6, 9, 14, 16 and 20), three avoidance/numbness items (items 5, 7, 8, 11, 12, 13, 17 and 22), and two hyperarousal items (items 4, 10, 15, 18, 19 and 21). Cases which did not satisfy the criterion were classified as N-PTSD. Using this procedure, 109 (64.5%) Vietnamese veterans were identified as P-PTSD and 60 (35.5%) as N-PTSD. If Creamer's cut-off value (34) for the IES-R ($M = 1.5$) was applied to this research, instead of using the standard scoring procedure for the PTSD, the rate of P-PTSD identified would be 40.2% instead of 64.5%.

Because the Intrusive Experiences (IE) scale (item 1, 8, 12, 62, 66, 70, 72, and 74) on the TSI is used to measure intrusive symptoms associated with posttraumatic stress, the IE was used as the B criterion of the DSM-IV-TR. Similarly, because the Defensive Avoidance (DA) scale (item 2, 4, 23, 59, 67, 83, 87, and 89) is used to measure posttraumatic avoidance, the DA was used as the C criterion of the DSM-IV-TR. The Anxious Arousal (AA) scale (item 22, 27, 31, 41, 51, 54, 91, and 97) and Anger/Irritability (AI) scale (item 3, 15, 34, 35, 37, 45, 57, 63 and 93) were used as the D criterion of the DSM-IV-TR because they were used to measure the posttraumatic hyperarousal symptoms. Therefore, a participant who checked at least 1 IE item, 3 DA items and any two AA and/or AI items was considered to be P-PTSD. All other participants were considered to be N-PTSD. Out of 169 Vietnamese veterans responding to the study, 53.3 percent ($N=90$) were P-PTSD and 46.7 percent ($N=79$) were N-PTSD.

The same process as step 1 was applied to the "DSM-IV-TR-PTSD in context questionnaire" to determine probable PTSD cases. The questions used in this questionnaire specifically addressed the Vietnam war context. If the veterans endorsed at least one intrusion symptom (B criterion, items 1 to 5), three avoidance/numbness symptoms (C criterion, items 6 to 12), and two hyperarousal symptoms (D criterion, items 13 to 17) he or

she was identified as P-PTSD. Cases which did not satisfy the principle were assigned to the N-PTSD group. Forty-nine (29%) of Vietnamese veterans were identified as P-PTSD, and 120 (71%) as N-PTSD.

Since the researcher did not conduct clinical interviews with participants there was no way to unambiguously determine a positive diagnosis of PTSD among the Vietnamese veterans. Following the recommendation of Keane (1988) that researchers should use multiple assessment measures prior to conferring the PTSD diagnosis (35), the match of P-PTSD cases from these three scales led to a final conservative rate of P-PTSD reported in this study. Results indicated that 33 (19.5%) Vietnamese veterans in this study show P-PTSD, and 136 (80.5%) N-PTSD on all three measures. The NVVRS conducted by Kulka et al. (1990) indicated that 30.9 percent of American male veterans and 26.9 percent of American female veterans of the Vietnam-America war experienced PTSD during their lifetime (8). Although the female Vietnamese veterans sample was small for statistical purposes, the P-PTSD rate was 27.3%.

Hypothesis 2. It was expected that Vietnamese veterans would evidence lower levels of war-related stress symptoms than would American-Australian veterans. This hypothesis was strongly confirmed.

To test hypothesis 2, a review of the literature on symptoms for American Australian veterans of the Vietnam-America war was conducted. Data from previous studies on PTSD among American and Australian veterans (34, 36, 37, 38, 39, 40) (see Table 1) were combined into a composite index, in which means for the IES-R, PDEQ, and SCL-90-R scales and their subscales were calculated by weighting the means by their appropriate sample sizes.

Table.1. Summary of Studies of PTSD Symptoms of American-Australian Veterans

	Tampke	Carson	Orr	Metzger	Creamer	Forbes
SCL-90-R-GSI	-	N=17 M=1.2	N=20 M=1.7	N=29 M=1.2	-	N=12 M=2.0
IES-R	-	N=17 M=2.3	-	N=29 M=49.7	N=120 M=2.64	N=12 M=2.4
IES-R-Intrusion	-	-	-	-	N=120 M=2.72	N=12 M=2.5
IES-R-Avoidance	-	-	-	-	N=120 M=2.30	N=12 M=2.1
IES-R-Hyperarousal	-	-	-	-	N=120 M=2.99	N=12 M=2.8
PDEQ	N=74 M=27.68	N=17 M=25.4	-	-	-	-

Note. Means of scales and subscales. Dashes indicate the number and mean were not estimated. PTSD = Post-Traumatic Stress Disorder. N = Sample size. M = Mean. IES-R = Impact of Event Scale – Revised. IES-R-Intrusion = Intrusion subscale of IES-R. IES-R-Avoidance = Avoidance subscale of IES-R. IES-R-Hyperarousal = Hyperarousal subscale of IES-R. PDEQ = Peritraumatic Dissociation Experiences Questionnaire. SCL-90-R GSI = Symptoms CheckList-Revised Global Severity Index.

Comparisons between these composite means and the means for the Vietnamese sample were made using independent t-tests. The means on IES-overall, IES-Intrusion, IES-Avoidance, IES-Hyperarousal, PDEQ, and SCL-90-R were significantly lower in the Vietnamese sample than in the American-Australian sample (t from 8.11 to 36, df from 163 to 166, see Table 2).

Table.2. Differences Between Vietnamese Veterans and American-Australian Veteran's Level of PTSD and Other Psychological Symptoms

	Vietnamese sample	American-Australian sample	Results
IES-R	N=167	N=178	t= 14.68
	M=1.44	M=2.53	df=166
	SD=.998	SD=.77	p<.001
IES-R-Intrusion	N=166	N=132	t= 9.36
	M=1.58	M=2.61	df=165
	SD=1.04	SD=.76	p<.001
IES-R-Avoidance	N=165	N=132	t= 27.69
	M=1.18	M=2.26	df=164
	SD=1	SD=.8	p<.001
IES-R-Hyperarousal	N=165	N=132	t= 36
	M=1.53	M=2.97	df=164
	SD=1.1	SD=.84	p<.001
PDEQ	N=164	N=91	t= 10.73
	M=16.49	M=27.25	df=163
	SD=7.05	SD=9.8	p<.001
SCL-90-R-GSI	N=167	N=78	t= 8.11
	M=.85	M=1.45	df=166
	SD=.56	SD=.68	p<.001

Note. Sample size (N), mean (M) and standard deviation (SD) of scales and subscales. IES-R = Impact of Event Scale – Revised. IES-R-Intrusion = Intrusion subscale of IES-R. IES-R-Avoidance = Avoidance subscale of IES-R. IES-R-Hyperarousal = Hyperarousal subscale of IES-R. PDEQ = Peritraumatic Dissociation Experiences Questionnaire. SCL-90-R GSI = Symptoms CheckList-Revised Global Severity Index.

Hypothesis 3. It was predicted that levels of PTSD and other psychological symptoms would correlate with war-related stress among Vietnamese veterans.

War zone exposure (WZE) scores were created by calculating the mean of 15 items on which respondents reported war experiences (“A history of Vietnam-America War Experiences” questionnaire). Combat roles (CR) scores were similarly calculated as the mean of 19 items describing the veterans’ roles in combat (“Dangerous Situations in the Vietnam-America War” questionnaire). Combat exposure (CE) scores were the mean of 25 items related to the degree of direct experience with combat (“Military Experiences in the Vietnam-America War” questionnaire).

The WZE scores ranged from 1.31 to 3.93 (M = 2.52, SD = .51). Correlations between WZE and PTSD and other psychological symptoms showed that almost all the correlations between WZE scores and SCL-90-R, IES-R, PDEQ, and TSI scales and their subscales scores were statistically significant, except for the Avoidance subscale of the DSM-IV-TR-PTSD in context questionnaire, and the Sexual Concerns and Dysfunctional Sex Behavior subscales of TSI (see Table 3). The correlations ranged from 0.159 (Psychotic subscale of SCL-90-R, p = .043) to 0.442 (Anxious Arousal subscale of TSI, p = .000). The results indicated that the higher the level of WZE the higher the level of PTSD on IES-R and its subscales; PDEQ; SCL-90-R and its subscales; DSM-IV-TR-PTSD in context questionnaire and its subscales; TSI and its scales.

Table 3. Correlations of War Zone Exposure, Combat Roles and Combat Exposure scores with SCL-90-R, IES-R, PDEQ, DSM-IV-TR-PTSD in context, TSI scales and their subscales

Scales and their subscales	War zone exposure	Combat roles	Combat exposure
SCL-90-R GSI	.338(**) N = 165	.374(**) N = 164	.436(**) N = 165
SCL-90-R-Somatization	.405(**) N = 164	.364(**) N = 163	.495(**) N = 165
SCL-90-R-Obsession-Compulsion	.374(**) N = 164	.336(**) N = 162	.424(**) N = 164
SCL-90-R-Interpersonal	.197(*) N = 163	.319(**) N = 162	.293(**) N = 164
SCL-90-R-Depression	.298(**) N = 164	.373(**) N = 164	.390(**) N = 164

SCL-90-R-Anxiety	.343(**)	.352(**)	.435(**)
	N = 162	N = 162	N = 163
SCL-90-R-Hostility	.231(**)	.255(**)	.333(**)
	N = 163	N = 163	N = 164
SCL-90-R-Phobia	.309(**)	.349(**)	.382(**)
	N = 162	N = 162	N = 163
SCL-90-R-Paranoid	.176(*)	.316(**)	.277(**)
	N = 163	N = 162	N = 164
SCL-90-R-Psychotic	.159(*)	.329(**)	.282(**)
	N = 162	N = 162	N = 163
IES-R	.364(**)	.458(**)	.538(**)
	N = 165	N = 164	N = 165
IES-R-Intrusion	.438(**)	.505(**)	.591(**)
	N = 164	N = 164	N = 164
IES-R-Avoidance	.271(**)	.335(**)	.448(**)
	N = 164	N = 164	N = 164
IES-R-Hyperarousal	.400(**)	.455(**)	.511(**)
	N = 164	N = 163	N = 165
PDEQ	.250(**)	.405(**)	.374(**)
	N = 163	N = 163	N = 164
DSM-IV-TR-PTSD in context	.274(**)	.313(**)	.379(**)
	N = 166	N = 163	N = 165
Intrusion DSM-IV-TR-PTSD in context	.315(**)	.273(**)	.325(**)
	N = 166	N = 163	N = 165
Avoidance DSM-IV-TR-PTSD in context	.069	.207(**)	.189(*)
	N = 166	N = 163	N = 165
Hyperarousal DSM-IV-TR-PTSD in context	.286(**)	.252(**)	.395(**)
	N = 165	N = 163	N = 164
IES-R-PTSD	.256(**)	.227(**)	.344(**)
	N = 167	N = 164	N = 165
TSI-DSM-PTSD -Probable	.264(**)	.290(**)	.319(**)
	N = 167	N = 164	N = 165
DSM-IV-TR-PTSD in context - Probable	.093	.208(**)	.254(**)
	N = 167	N = 164	N = 165
Probable PTSD- Overall	.096	.246(**)	.268(**)
	N = 167	N = 164	N = 165
TSI	.308(**)	.483(**)	.522(**)
	N = 165	N = 163	N = 164
TSI - Anxious arousal	.442(**)	.374(**)	.538(**)
	N = 160	N = 159	N = 160
TSI- Depression	.310(**)	.337(**)	.377(**)
	N = 160	N = 159	N = 160

TSI - Anger/Irritability	.358(**) N = 160	.410(**) N = 159	.463(**) N = 160
TSI - Intrusive experience	.426(**) N = 160	.374(**) N = 159	.494(**) N = 160
TSI - Defensive avoidance	.236(**) N = 160	.281(**) N = 159	.331(**) N = 160
TSI - Dissociation	.293(**) N = 160	.319(**) N = 159	.386(**) N = 160
TSI - Sexual concerns	.116 N = 160	.193(*) N = 159	.229(**) N = 160
TSI - Dysfunctional Sex- Behavior	.107 N = 160	.235(**) N = 159	.197(*) N = 160
TSI - Impaired Self- reference	.270(**) N = 160	.375(**) N = 159	.368(**) N = 160
TSI - Tension Reduction Behavior	.250(**) N = 160	.292(**) N = 159	.298(**) N = 160
TSI - Trauma	.326(**) N = 160	.374(**) N = 159	.449(**) N = 160

Note. SCL-90-R = Symptoms CheckList-90-Revised. SCL-90-R GSI = Global Symptoms Index of SCL-90-R. IES-R = Impact of Event Scale – Revised. PDEQ = Peri-Traumatic Dissociation Experiences Questionnaire. DSM-IV-TR-PTSD in context = Questionnaire is designed based on DSM-IV-TR criteria. . IES-R-PTSD = PTSD on Impact of Event Scale – Revised. TSI-DSM-PTSD = PTSD on TSI based on DSM-IV-TR criteria. DSM-IV-TR-PTSD in context= PTSD on DSM-IV-TR-Formatted questionnaire. PTSD-Overall = PTSD on all three scales. TSI = Trauma Symptoms Inventory. **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

An independent t-test compared the mean WZE scores of the P-PTSD group (M = 2.65, SD = .45) with that of the N-PTSD group (M = 2.38, SD = .53) on the TSI. This test was found to be statistically significant [$t(165) = 3.518, p < 0.001$], indicating that the P-PTSD group had significantly higher scores on WZE than did the N-PTSD group. Likewise, for the IES-R, the P-PTSD group was found to have significantly higher scores on WZE than did the N-PTSD group (M = 2.62, SD = .47 vs. M = 2.35, SD = .53, $t(165) = 3.403, p < 0.001$). However, independent t-tests showed no WZE significant differences between P-PTSD and N-PTSD groups based on the DSM-IV-TR-PTSD in context questionnaire and overall P-PTSD variables (see Table 4).

Table 4. Independent t-tests comparing war zone exposure scores of non-probable PTSD versus probable PTSD group for IES-PTSD, TSI-DSM-PTSD, DSM-IV-TR-PTSD in context, and PTSD-Overall

Scales	Mean Difference	t	df	Sig. (2-tailed)
IES-R-PTSD	-.27	-3.40	165	.001
TSI-DSM-PTSD	-.27	-3.52	165	.001
DSM-IV-TR-PTSD in context	-.10	-1.20	165	.233
PTSD-Overall	-.12	-1.23	165	.623

Note. IES-R-PTSD = PTSD on Impact of Event Scale – Revised. TSI-DSM-PTSD = PTSD on TSI based on DSM-IV-TR criteria. DSM-IV-TR-PTSD in context = PTSD on DSM-IV-TR-Formatted questionnaire. PTSD-Overall = PTSD on all three scales.

The CR scores ranged from 0.05 to 3.33 (M = 0.78, SD = .68). Correlations between CR scores and SCL-90-R, IES-R, PDEQ, and TSI scales and their subscales scores were statistically significant. The correlations ranged from 0.193 (Sexual Concern subscale of TSI, $p = .015$) to 0.505 (Intrusion subscale of IES-R, $p = .000$, see Table 3), indicating that the more dangerous the CR the higher the level of symptoms of PTSD and other psychological symptoms.

Independent t-tests compared mean CR scores of the IES-R P-PTSD group (M = .89, SD = .72) with that of the IES-R N-PTSD group (M = .57, SD = .54). This test was found to be statistically significant [$t(162) = 2.967, p < 0.003$], indicating that the P-PTSD group had significantly higher CR scores than did the N-PTSD group. Likewise, the P-PTSD group was found to have significantly higher CR scores than did the N-PTSD group for groupings based on the TSI (M = .96, SD = .72 vs. M = .56, SD = .56, $t(162) = 3.952, p < 0.000$), DSM-IV-TR-PTSD in context questionnaire (M = 1.00, SD = .81 vs. M = .69, SD = .60, $t(162) = 2.4, p < 0.019$), and overall P-PTSD variables (M = 1.11, SD = .87 vs. M = .70, SD = .60, $t(162) = 2.608, p < 0.013$) (see Table 5).

Table 5. Independent t-tests comparing combat roles scores of non-probable PTSD and probable PTSD group for IES-PTSD, TSI-DSM-PTSD, DSM-IV-TR-PTSD in context, and PTSD-Overall

Scales	Mean Difference	t	df	Sig. (2-tailed)
IES-R-PTSD	-.33	-3.25	141.455	.001
TSI-DSM-PTSD	-.40	-3.95	161.611	.000
DSM-IV-TR-PTSD in context	-.31	-2.40	71.357	.019
PTSD-Overall	-.42	-2.61	40.138	.013

Note. IES-R-PTSD = PTSD on Impact of Event Scale – Revised. TSI-DSM-PTSD = PTSD on TSI based on DSM-IV-TR criteria. DSM-IV-TR-PTSD in context = PTSD on DSM-IV-TR-Formatted questionnaire. PTSD-Overall = PTSD on all three scales.

CE scores ranged from 0.04 to 3.32 (M = 1.22, SD = .78). Correlations between CE scores and SCL-90-R, IES-R, PDEQ, and TSI scales and their subscales scores were statistically significant. The correlations ranged from 0.189 (Avoidance subscale of DSM-IV-TR-PTSD questionnaire in context, $p = .015$) to 0.591 (Intrusion subscale of IES-R, $p = .000$) (see Table 3). The results indicated that the more dangerous the CE the higher the level of PTSD and other psychological symptoms.

Independent t-tests compared mean CE scores of the IES-R P-PTSD group (M = 1.41, SD = .72) with that of the IES-R N-PTSD group (M = .86, SD = .76). This test was found to be statistically significant [$t(163) = 4.67, p < 0.000$], indicating that the P-PTSD group had significantly higher CE scores than did the N-PTSD group. Likewise, the P-PTSD group was found to have significantly higher CE scores than did the N-PTSD group for groups formed using the TSI (M = 1.45, SD = .74 vs. M = .95, SD = .74, $t(163) = 4.301, p < 0.000$); DSM-IV-TR-PTSD in context questionnaire (M = 1.53, SD = .84 vs. M = 1.10, SD = .71, $t(163) = 3.359, p < 0.001$); and overall P-PTSD variables (M = 1.64, SD = .84 vs. M = 1.12, SD = .73, $t(163) = 3.553, p < 0.000$) (see Table 6).

Table 6. Independent t-tests comparing combat exposure scores of non-probable PTSD and probable PTSD group for IES-PTSD, TSI-DSM-PTSD, DSM-IV-TR-PTSD in context, and PTSD-Overall

Scales	Mean Difference	t	df	Sig. (2-tailed)
IES-R-PTSD	-.56	-4.67	163	.000
TSI-DSM-PTSD	-.50	-4.30	163	.000
DSM-IV-TR-PTSD in context	-.43	-3.36	163	.001
PTSD-Overall	-.52	-3.55	163	.000

Note. IES-R-PTSD = PTSD on Impact of Event Scale – Revised. TSI-DSM-PTSD = PTSD on TSI based on DSM-IV-TR criteria. DSM-IV-TR-PTSD in context = PTSD on DSM-IV-TR-Formatted questionnaire. PTSD-Overall = PTSD on all three scales.

Results indicated the more dangerous the WZE, CR and CE Vietnamese veterans experienced the more PTSD, dissociative and other psychological symptoms they suffered.

DISCUSSION

Hypothesis 1, which Vietnamese veterans of the Vietnam-America war would suffer war-related stress symptoms of PTSD, was supported.

In this study, 64.5% Vietnamese veterans were identified as P-PTSD on the IES-R; 53.3% on the TSI; and 29% on the DSM-IV-TR-PTSD in context questionnaire. The overall rate of P-PTSD among the Vietnamese veterans of this study was estimated to be 19.5%. The rate of P-PTSD decreased as the time periods (before the interview) specified in the questionnaires increased. The time periods specified in IES-R and TSI were 30 days and 6 months, respectively. No time period was specified in the DSM-IV-TR-PTSD in context questionnaire. This finding seems to be counterintuitive. In the present study, it took 3 hours, on average, for the participants to complete the questionnaires. The expected time to complete the packet was 70-80 minutes. The apparent reason for this difference is that most Vietnamese veterans in this sample were elderly, as evidenced by the mean age of 63.5. Mental and physical impairment associated with age, may have contributed to fatigue and lack of concentration when responding to the questionnaires, especially the DSM-IV-TR-PTSD in context questionnaire, which was situated at the end of the set of questionnaires. The researcher noticed that some participants checked the questionnaires

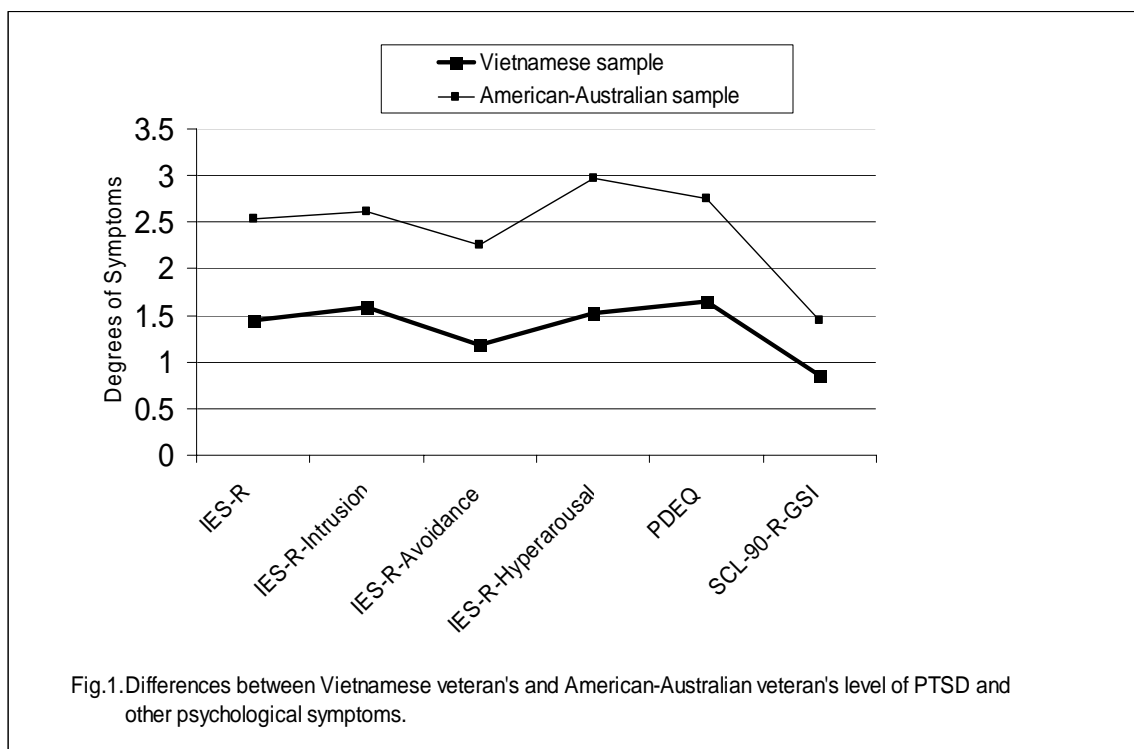
inattentively and indiscriminately. This was a shortcoming of the long collective interview. A shorter one-to-one interview would overcome this problem. Another reason for the low rate of P-PTSD when using the DSM-IV-TR-PTSD in context questionnaire is that this questionnaire is more restricted or conservative than the IES-R and TSI with respect to the range of symptoms.

The present findings are in the range of frequency of PTSD among American veterans in the Vietnam-America war reported by other studies. Egendorf et al. (1981) found that 21% to 26% of American veterans who served in Vietnam suffered PTSD, or even up to 35% for those exposed to heavy combat (21). Helzer et al. (1987) found that the rate of PTSD was 20% in veterans wounded in Vietnam (9). Likewise, Card (1987), as cited by Oei (1990), found that 19% of all veterans and 27% of veterans who were exposed to heavy combat suffered from PTSD (41). The Centers for Disease Control Vietnam Experience Study (1988) (the VES) reported that about 15% of American veterans experienced combat-related PTSD at some time during or after military service (7). Kulka et al. (1990) indicated that 30.9 percent of American male theater veterans and 26.9 percent of American female theater veterans experienced a lifetime prevalence of PTSD (8). In the present study, the P-PTSD rate of Vietnamese female veterans was 27.3%.

It is difficult to say whether the rate of P-PTSD among Vietnamese veterans is lower or comparable to that of American veterans because the methods used to determine rate of PTSD are different across studies. The present study was also conservative in determining PTSD, but the diagnosis in this study was for P-PTSD, not a clinical diagnosis for PTSD. Furthermore, the instruments used in the present study were different from those used in other studies. This study did ask participants about traumatic events confronted by them in the war, but did not ask their emotional reaction immediately accompanying those traumatic events. This study also did not involve a thorough clinical interview. As a result, the present study can not determine a rate of actual PTSD for this sample, and thus is not able to make a confident comparison between the estimate of PTSD in this sample and the foregoing studies of American veterans.

Hypothesis 2, which the levels of war-related stress symptoms among Vietnamese veterans were significantly lower than those among American Australian veterans, was strongly confirmed.

The results of this study indicated that the profile configuration of symptoms of Vietnamese veterans was similar to the one of American and Australian veterans but Vietnamese veterans reported significantly lower levels of PTSD symptoms than did American-Australian veterans, including overall, intrusive, avoidance, and hyperarousal symptoms on the IES-R. They were also significantly lower in dissociative symptoms on the PDEQ and in other psychological symptoms on the SCL-90-R (see Fig. 1). From reviewing the available literatures on PTSD among American veterans and the observations from this study, the following tentative explanations could be attempted for these differences.



As mentioned previously there are three factors related to the development of PTSD among American veterans. These are pre-war experiences and conditions, war experience, and post-war factors. With regard to war trauma, the Vietnam-America war was a very special war which brought unique experiences to American veterans (9, 31, 42, 43, 44). It was the first to end without an American victory (20). There were no front lines in this war, and it was often difficult to tell friend from foe (31). These features dramatically impacted the experiences of American soldiers. They had no clear sense of the identity of the

adversary, no sense of security, and no support from the Vietnamese that they thought they were helping or allied with (43). As a consequence, an unavoidable sense of isolation and bad feeling developed between the American forces and their allies.

The situation of the Vietnamese veterans was totally different. The Vietnamese had justified reasons for engagement in the war, could discern the adversary, were able to feel relatively safe, and had the strong support of their country, and the local population. The Vietnamese veterans fought for their lives, for their families, relatives and country. They were founders of the guerilla war therefore they knew actively what they were doing, how it should have been done, or where and when they did it. They knew who were their comrades or adversaries. They did not have the passive or uncertain feelings characteristic of many American soldiers. The hit-and-run tactics, the fluidity, and the mobility of the Vietnamese soldiers generally made the American soldiers confused in locating them, and this, in turn, helped them minimize their casualties. Additionally, the Vietnamese soldiers got strong support from the Vietnamese population. As a result, they had greater feelings of safety than did the American soldiers.

Pride and identification with their leadership made the experience of the Vietnamese veterans very different from that of the American veterans. Vietnamese veterans were asked “What does it mean to you to belong and/or to attend the meeting of the Veterans Club?” This open-ended question was aimed at investigating the feelings and thoughts of the Vietnamese veterans about being a member of the Veterans Club. In response to this question several veterans expressed their pride to have been “Uncle Ho’s soldier” and to have fought for the ideals of the revolution and army. Among 142 participants responding to that item, 66.2% revealed that they were there for re-meeting their comrades, recollecting their hard war experiences, and receiving mutual support from one another; 25.4% noted that they were there for recalling their revolutionary ideals and army traditions; and 20.4% said that they felt honored to have been “an Uncle Ho’s soldier” and a member of the Communist Party. Although there was no item in the set of questionnaires in this study asking about participants’ perceptions about the result of this war, through personal discussions with them, the researcher noted that the majority of veterans considered themselves to be the winners of the war. From these disclosures we can see contrasts between the American veterans and Vietnamese veterans in the war. The researcher hypothesizes that there exists a negative correlation between Vietnamese

veteran's belief of winning the war and the level of PTSD symptoms. This feature should be extremely important in minimizing the level and intensity of their later PTSD symptoms. America's postwar homecoming environment: lack of social support. The lack of social support for American veterans probably contributed to the development of PTSD symptoms. The Vietnam-America war was a politically unpopular one, and many American veterans were ostracized on their return home. This was in contrast to the experiences of veterans coming home from previous wars such as World War II who were given a hero's welcome. The effect of the negative homecoming environment on the development of PTSD symptoms has been mentioned by many researchers (9, 21, 22, 23, 24, 26, 27, 29, 33, 41, 44, 45). Society had subjected American soldiers to catastrophic combat victimization, and, when they returned, society avoided the victims, then blamed them for what they had done in Vietnam (45).

The situation of the Vietnamese veterans was totally different. After the war, they were recognized by their government, country, and citizens as contributors to the victory. Many of them were even recognized as heroes of the country. They were encouraged and helped to continue and follow their education and careers, as evidenced by the rate of high school and university or higher levels of education (73.3%) in the sample. They were given jobs, provided with houses, and other privileges. They were given more opportunities than other people in society. Those privileges may have made the Vietnamese veterans feel that they were compensated and rewarded for their sacrifice and contribution. This may have minimized their potential PTSD and other psychological symptoms. And they could be the reasons for the lower level of PTSD and other psychological symptoms among the Vietnamese veterans than among the American veterans. As a result, it would be expected that the rate of PTSD among the Vietnamese veterans would be significantly lower than that of the American veterans if the same method and instruments as other studies were employed. Further study needs to be conducted to investigate this hypothesis.

Hypothesis 3, that levels of PTSD and other psychological symptoms would correlate with war-related stress among Vietnamese veterans, was strongly supported.

The results of the present study indicated that almost all the correlations of WZE, CR, and CE scores with SCL-90-R, IES-R, PDEQ, and TSI scales and their subscales scores were statistically significant. These results indicated that the higher the level of war-related stress the Vietnamese veterans experienced, the higher the level of PTSD symptoms

they suffered post-war on the IES-R and its subscales, on the DSM-IV-TR-PTSD in context questionnaire and its subscales. Likewise, the higher the level of war-related stress the Vietnamese veterans experienced, the higher the level of dissociative symptoms on the PDEQ, the higher the level of other psychological symptoms they had on the TSI and its scales, and on the SCL-90-R and its subscales.

The correlations between WZE scores and the Avoidance subscale of the DSM-IV-TR-PTSD in context questionnaire, and Sexual Concerns and Dysfunctional Sex Behavior subscales of the TSI were not significant. The insignificant correlations of Sexual Concerns and Dysfunctional Sex Behavior subscales of the TSI with war zone exposure scores could possibly be explained by the fact that sexual issues are not openly disclosed or discussed among the Vietnamese, especially among the elderly. The participants may have responded to those items related sex with denial. It is necessary to investigate this issue more in future studies.

In summary, the Vietnamese veterans in the Vietnam-America war with higher war-related stress had significantly more PTSD and higher levels of other psychological symptoms of psychopathology. These findings are generally consistent with results of previous studies (8, 18, 21, 29, 46, 47, 48).

Methodological Considerations

Translation. Although the procedures of translation into Vietnamese and back translation into English were strictly followed, there were still some items in which meanings and/or concepts seemed abstract, ambiguous, quite new or too technical for the participants to understand as translated into Vietnamese. In particular, phrases that are idiomatic such as “blank out”, “space out” or “automatic pilot” were very hard to translate into Vietnamese. The researcher could make the participants understand the intended meanings of those terms, but in order to do that he had to use terms in Vietnamese, not in English. Some participants commented that certain terms in the set of questionnaires were difficult to understand. This may have affected the accurate understanding of items, and the accuracy of responses. In addition, some participants may not have asked for explanation in cases where they did not understand. A one-to-one interview would help minimize this problem. However, the number of such items was too few to cause major interpretation problems with the instruments. Further adaptations of the scales would be necessary if they are to be used in this culture in the future.

Length of the protocol. As mentioned in the discussion of the first hypothesis, the length of interview may have affected the quality of responses and willingness to respond to questions by the participants. A shorter one-to-one interview would overcome this shortcoming.

Under-endorsement of symptoms. The fatigue of the participants near the end of the interview may have led some of them to indiscriminately mark zero on the symptom checklist. Further, there may have been a tendency to deny on those items related to trauma. A comparison between the mean Response Level scores of the P-PTSD and N-PTSD groups on all scales was made using independent t-test. The Response Level scale is a validity scale of the TSI. It consists of the number of zeros endorsed for those items least likely to receive a zero in the standardized sample. A high score on this scale reflects a tendency toward defensiveness, a general under-endorsement response set, or a need to appear unusually symptom-free. The result indicated that the Response Level means of the N-PTSD group on all scales (IES-R, TSI, DSM-IV-TR-Vietnam, and PTSD-overall) were significantly greater than those of the P-PTSD group (t ranged from 3.51 to 8.11, df from 86.49 to 122.78, see Table 7). The denial or under-endorsement by the N-PTSD group may have led to the underestimation of symptoms in this study. Future studies should take into consideration this issue when conducting studies of PTSD.

Table 7. Independent t-tests comparing TSI - Response Level means of non-probable PTSD and probable PTSD group for IES-R-PTSD, TSI-DSM-PTSD, DSM-IV-TR-PTSD in context, and PTSD-Overall

Scales	Mean Difference	t	df	Sig. (2-tailed)
IES-R-PTSD	9.27	4.78	86.49	.000
TSI-DSM-PTSD	12.91	8.11	110.23	.000
DSM-IV-TR-PTSD in context	5.9	3.51	122.78	.001
PTSD-Overall	8.9	5.94	96.92	.000

Note. IES-R-PTSD = PTSD on Impact of Event Scale – Revised. TSI-DSM-PTSD = PTSD on TSI based on DSM-IV-TR criteria. DSM-IV-TR-PTSD in context = PTSD on DSM-IV-TR-Formatted questionnaire. PTSD-Overall = PTSD on all three scales.

CONCLUSIONS AND SUGGESTIONS FOR FUTURE STUDY.

In summary, the present study found that Vietnamese veterans in the Vietnam-America war did suffer from PTSD and other psychological symptoms similar to the victims of trauma in general, and American veterans in particular. However, the level of PTSD and other psychological symptoms among the Vietnamese veterans was significantly lower than among American veterans. The level of war-related stress significantly correlated with the level of PTSD and other psychological symptoms. Future research should study the rate of positive PTSD rather than P-PTSD among Vietnamese veterans, including the rate among female Vietnamese veterans. It would be expected that PTSD and other psychological symptoms exist among Vietnamese veterans who were soldiers in the South Vietnam Army (ARVN) in the Vietnam-America war. It would be also expected that rates and level of PTSD and other psychological symptoms among Vietnamese veterans of the former North Vietnam Army would be lower than the rate for ARVN Vietnamese veterans currently living in Vietnam and in other countries. With respect to instruments and methodology, future studies should be conducted on a one-to-one basis to limit potential for error. The under-endorsement issue, especially for sexual dysfunction, should be considered in the future studies. Furthermore, appropriate standardized scales should be created for studying PTSD in the Vietnamese population. Finally, this research is unique in that it represents the first study of former Vietnamese military personnel who fought in the Vietnam-America war and assessed their prolonged war-related PTSD symptoms.

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