

**A PILOT STUDY ON THE PREVALENCE OF POST-TRAUMATIC STRESS
DISORDER (PTSD) AMONG VETERANS MEMORIAL MEDICAL CENTER (VMMC)
DEPARTMENT OF PSYCHIATRY PATIENTS WITH COMBAT EXPERIENCE FROM
JANUARY 2013 – JANUARY 2015**

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ABSTRACT

OBJECTIVES: The objectives of this pilot study was to establish the preliminary data on the prevalence of Post-Traumatic Stress Disorder (PTSD) among VMMC Department of Psychiatry In-Patients and Out-Patients with combat experience. **METHODOLOGY:** It is a cross sectional study conducted by reviewing patients' charts. Case definition was based on the standardized Clinician-Administered PTSD Scale (CAPS) – Filipino Version. In-patients were recruited directly while new and old OPD patients were recruited through chart review and invitations. Adequate combat exposure was measured with the United States Veterans Affairs Combat Exposure Scale (USVACES). Data was presented as lifetime and current prevalence among the exposed population. **RESULTS:** The study showed that 17.85% of the subjects (n=28) of this pilot study had a lifetime diagnosis of PTSD. None of the subjects reached the symptom threshold for a current diagnosis of PTSD. Three out of 19 subjects (15.78%) diagnosed with Schizophrenia had a lifetime diagnosis of PTSD while two out of five subjects (40%) with Bipolar I Disorder had comorbid lifetime diagnosis of PTSD. The number of subjects needed to power the study using Daniel's (1999) formula was N= 225. **CONCLUSION:** The pilot study showed that the lifetime prevalence rate of PTSD among VMMC Psychiatry patients (17.85%) was comparable to worldwide trends. The study did not report any new occurrences of PTSD.

KEYWORDS: PTSD, Veterans of war, Combat Experience

INTRODUCTION

The mental health of any fighting force directly influences their occupational effectiveness¹. The latest data of the World Health Organization on the Global burden of Post-traumatic Stress Disorder (PTSD) is dated 2001². The United States Veterans Affairs' National Center for PTSD published numerous studies that benefitted American veterans for the past decades. It also helped non-medical personnel through formulation of standardized treatment recommendations and Standard Operating Procedures. These have both eased the burden on state psychiatrists and psychologists and increased access to veterans.

Based on the DSM-IV-TR Criteria, Post-traumatic Stress Disorder has three (3) main symptom domains, aside from the history of trauma: re-experiencing symptoms, avoidance and numbing symptoms and hyperarousal symptom³.

The long duration of illness among these patients who can be diagnosed with lifetime PTSD imply that these observed symptoms are residual symptoms of PTSD. Intrusive recollections represent a less frequent, albeit persistently present symptom.

Other studies have attempted to establish their military's own prevalence rates and risk factors. In 2009, Iversen et al determined that 4.8% of the UK military were suffering from PTSD¹. They also found that there was no health effect in deploying regular personnel, but an increased risk for reservists that were deployed. Furthermore, they found that the prevalence of PTSD symptoms were similar between regular US and UK Iraq combatants.

Iversen et al. Also found that younger men with pre-enlistment vulnerabilities such as being separated, divorced or widowed increased the risk for developing PTSD¹. Litz and Schlenger in 2009 suggested that combat and operational experiences (war-zone experiences) be aggregated into thematic categories such as: life-threat, loss, observing carnage and loss of life, morally challenging acts of omission or commission, betrayal of service and role expectations as well as fatigue/exposure to elements⁴.

The population chosen for this study – retired military personnel with combat experience – has been shown to be the most vulnerable to develop mental health problems post deployment in numerous studies⁵. Time has been shown to be an independent factor in epidemiologic studies in PTSD. Studies that have documented probable PTSD at time points more distal to the participants' combat exposure have shown prevalence rates similar to studies that had been done within 2 years of post-deployment health exams⁴.

More recent US based studies were done using convenience samples from recent wars (Operation Enduring Freedom [OEF] and Operation Iraqi Freedom [OIF]) limiting the generalizability of these studies. Hoge, et al (2004) estimated the prevalence of probable PTSD to be 9% at predeployment, with postdeployment rates at 12% and 18% for OEF and OIF troops respectively⁶. Vasterling, et al. (2006) found a probable PTSD prevalence rate of 11.6%⁷. Hoge, et al. (2007) examined troops 1 year post deployment and found 16.6% PTSD prevalence rate⁸. Seal, et al. (2007) found a 13% PTSD prevalence rate for separated service members who sought

Veterans Affairs healthcare between 2001 and 2005 by going through charts⁹.

It must be considered that whether deployed or in garrison, a relatively high percentage of service personnel will endorse significant PTSD symptoms even though they are functionally resilient. Some may want care because they are suffering, while others may see their experience as an occupational hazard and may expect a diminution of symptoms over time, especially if they get respite⁴. Over time, symptoms may transform or evolve into other mental disorders, especially those of psychotic or mood disorders.

The Philippines on the other hand, has scarce epidemiologic data on the burden of PTSD among our active military personnel and veterans.

The Philippine military has been an important asset protecting our sovereign territory from external and internal threats. Given that our security largely depends on our soldiers, we must be certain to select the best men and women who are mentally fit to protect our country. The risk of our soldiers developing mental disorders especially “war shock” increases the financial burden of caring for our combat-exposed veterans. The Philippines has no published data on the prevalence and/or incidence of most mental diseases including PTSD. The data that will be gathered by a study such as this will equip those who screen for neuropsychiatric problems prior to employment in the different branches of the Philippine military of the common background characteristics or risk factors that make a potential soldier vulnerable to develop mental disorders. It can also be a guide that will help plan for the future of the Philippine military and for the fiscal future of military hospitals that serve our veterans who are mentally ill.

This study will benefit the different branches of the Philippine Military. Data gathered in this study and follow-up studies can be used to make policies in screening military personnel applicants who may be at high risk for developing PTSD so as to prevent significant loss of personnel due to development of mental problems during exposure to combat duty.

Preventive measures such as awareness of the psychological burden, increasing access to assistance and eliminating the stigma in seeking psychiatric consult could be instituted.

The objective of this study was to establish the prevalence of Post-Traumatic Stress Disorder among VMMC Department of Psychiatry In and Out-patients (OPD) with Combat Experience.

METHODOLOGY

This VMMC Department of Psychiatry patients were an

accessible set of military clients whether in active service or inactive veterans, from whom the prevalence of PTSD among the military personnel could be determined. The hospital did not require an Institutional Review Board (IRB) approval since it was merely an observational rather than an interventional study.

Research Design

This pilot study was an observational study, done as a retrospective case series without a control group. Case definition was based on the standardized Clinician-Administered PTSD Scale (CAPS) – Filipino Version on VMMC Department of Psychiatry In-Patients and Out-patients with combat experience. Although this scale was not validated, this study served as a pilot test for its use.

Population

Population sample included all veteran patients who were admitted in the Department of Psychiatry ward along with new and old psychiatry OPD patients who had combat experience from the period of January 1, 2013 – January 1, 2015.

Inclusion Criteria

All psychiatry In-patients and Out Patients, new or old Retired Philippine Veteran (RPV) patients, those from the Philippine Veterans Affairs Office (PVAO) and those for yearly re-evaluation of service-related psychiatric disabilities with combat experience during deployment were included.

Exclusion Criteria

The following patients were excluded from the study: patients that had an Axis II diagnosis i.e. Personality Disorder or Mental Retardation, those with Dementia or had moderate to severe cognitive impairment i.e. Mini Mental Status Exam score of <20.

Data Collection Methods & Tools

The Combat Experience Scale (CES) is a seven-item scale designed to assess the frequency of combat exposure on a five-point Likert scale¹⁰. The CES has demonstrated high internal consistency ($\alpha=0.85$) and test-retest reliability ($r=0.97$) as well as a consistent predictor of PTSD symptomatology among veterans. The United States Veterans Affairs (USVA) and National Center for PTSD count it as an official instrument.

In 1999, Breslau et al. Developed a 7-item screen that was a short form of the modified National Institute of Mental Health Diagnostic Interview Schedule (NIMH- DIS) and the WHO Composite International Diagnostic Interview version 2.1¹¹. The screening scale was designed to measure lifetime history of PTSD in individuals exposed to traumatic events as defined in DSM IV-TR. A score of 4 or more on the seven-

symptom screening scale had the following characteristics for diagnosing DSM IV-TR PTSD: sensitivity = 80%, specificity = 97%, positive predictive value = 71% and negative predictive value = 98%.

The scale included the following DSM-IV-TR symptoms: Avoidance and Numbing - (C2) Efforts to avoid activities, places, people that arouse recollections of the trauma; (C4) Diminished interest in activities; (C5) Feeling of detachment from others; (C6) Restricted affect; (C7) Sense of foreshortened future; Arousal - (D1) Sleep problems; and (D5) Exaggerated startle response.

Breslau, et al. (1999) further emphasized that five of the seven symptoms were from the avoidance and numbing symptom group, including all four numbing symptoms¹¹. It has been observed in studies by Green (1993) and Kilpatrick, et al. (1993) that avoidance and numbing symptom group were the least frequently met criterion^{12,13}. This was critically significant in diagnosing PTSD because only a few patients reported sufficient symptoms in the other symptom group. Kimerling, et al (2006) evaluated Breslau's Short Screening Scale (BSSS) for PTSD for use in Primary Care¹⁴. Comparing it to the CAPS, they found that in their setting, the BSSS Scale maintained a threshold of acceptable sensitivity at 4 present symptoms and a likelihood ratio that ranged from 0.04 to 13.47 (95% CI).

In 1990, Blake et al. Working with the USVA National Center for PTSD developed the Clinician-Administered PTSD Scale (CAPS)¹⁵. The CAPS is considered the gold standard in PTSD assessment by bodies such as the United States Veterans Affairs, the US National Center for PTSD and the International Society for Traumatic Stress Studies. It is a 30-item structured interview that corresponds to the DSM-IV-TR criteria for PTSD. The CAPS can be used to make a current (past month) or lifetime diagnosis of PTSD or to assess symptoms over the past week. Some veterans may not at the point of screening, meet the criteria for PTSD but it can detect if the person has ever had PTSD at some point in their life. The CAPS was designed to be administered by clinicians and clinical researchers who have a working knowledge of PTSD. The CAPS assesses the 17 PTSD symptoms, questions target the impact of symptoms on social and occupational functioning, overall PTSD severity as well as frequency and intensity of five associated symptoms i.e. guilt over acts, survivor guilt, gaps in awareness, depersonalization and derealization.

Old patients with recorded combat experience and patients with known combat histories through chart-reviews will be invited to a re-interview of his/her psychiatric history and anamnesis on the first visit after obtaining informed consent. The Combat Exposure Scale (CES) and the Clinician-

Administered PTSD Scale (CAPS) will also be administered. Otherwise, it will be applied on the next visit.

New and PVAO patients for re-evaluation will be ascertained of combat experience via thorough psychiatric history and anamnesis on a scheduled follow-up. The Combat Exposure Scale (CES) and the Clinician-Administered PTSD Scale (CAPS) will be administered on the succeeding OPD follow-up visit or the next. In-patients' history will be reviewed and the CAPS applied as time will permit. (Figure 1)

Calculation of Ideal Sample Size

Part of the study's objective was to determine an appropriate number of subjects for powering a larger study. The range of observations from previous foreign studies showed an expected proportion from 11.6%⁴ to 18%⁶. The result of this pilot study revealed 5 subjects who met at least threshold symptoms of lifetime PTSD representing 17.85% of the population. This figure was chosen and integrated into Daniel's (1999) formula for to predict an ideal sample size¹⁶.

For calculating the ideal sample size, the following formula will be used¹⁶:

$$n=225= \frac{Z^2P(1-P)}{d^2} = \frac{(1.96)^2(0.1785)(1-0.1785)}{0.05^2}$$

Where

- n = sample size
- Z = Z statistic for a level of confidence
- P = expected proportion
(in this case, the result of the pilot study)

Paradigm

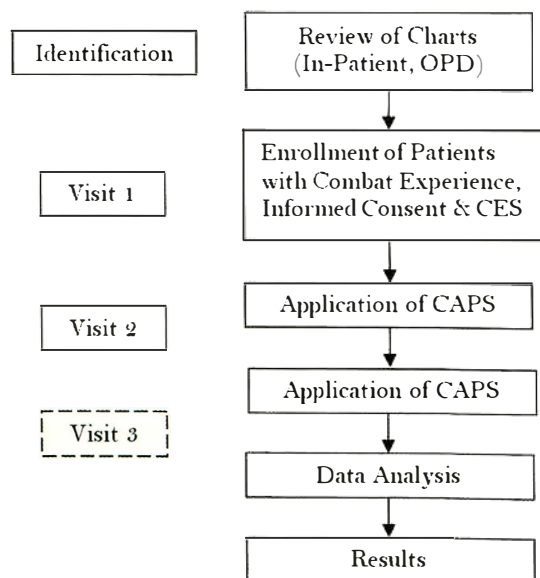


FIGURE 1. Study Flow chart

RESULTS

Demographics

A total of 28 subjects from regular patients at the Psychiatry OPD were identified as potential subjects and enrolled. There were no in-patients during the study period with combat exposure. Of these 27 were male representing 96.4% and only 1 was female (3.6%). The female subject actually had light combat exposure i.e. classified in the combat exposure scale with a score of 3. Most of the subjects were either currently married or had a history of being married (22, 78.57%). The remaining 6 or 21.43% had never been married. Most of the subjects had a high school level education (22, 78.58%) and were currently living with their families (27, 96.43%). The data showed that most of these veterans were currently unemployed (26, 92.86%).

The profile of the average subject in our study was 52 years old, male, married, high school graduate, living with their family while relying solely on their monthly pension as a source of income. This was representative of the typical VMMC Psychiatry patient as well. Average age of having been first hospitalized was 43 years old and the average number of hospitalizations was 5.21 times. (Table 1)

TABLE 1. Demographic Characteristics

	#	%
Gender		
Male	27	96.4
Female	1	3.6
Marital Status		
Never Married	6	21.43
Ever Married	22	78.57
Educational Attainment		
Elementary	0	
High School	22	78.57
College	6	21.43
Current Living Situation		
Supervised Group Facility	0	0
Living with Family	27	96.43
Living Alone	1	3.57
Employment Status		
Not	26	92.86
Employed	2	7.14

Post-traumatic Stress Disorder

The study showed that there were 5 patients (17.85 %) who had subthreshold symptoms that warranted a lifetime diagnosis of PTSD i.e. though not currently fulfilling the criteria for PTSD may have had such symptoms at one point in their life. Three subjects (10.71%) (Subjects #6, #20 and

#21) with subthreshold lifetime PTSD symptoms and two (7.14%) (Subjects #2 and #14) having extreme lifetime PTSD symptoms. Subjects #2 and #14 also had current subthreshold symptoms of PTSD. (Table 2)

TABLE 2. CES Score & PTSD Symptom Severity Scores

Subject #	Corrected CES	Current PTSD SS	Lifetime PTSDSS
1	3	4	9
2	21	22	82
3	23	2	28
4	2	2	16
5	28	6	29
6	15	7	41
7	4	0	14
8	11	0	16
9	4	0	11
10	3	0	10
11	0	3	38
12	13	0	13
13	0	9	40*
14	30	29	80
15	2	2	18
16	21	0	13
17	13	0	11
18	19	0	22
19	15	2	22
20	16	8	55
21	17	0	49
22	21	0	13
23	9	0	9
24	2	2	13
25	0	0	16
26	0	0	8
27	16	2	14
28	5	4	49*

*N.B. 2 subjects (#13 & 28) had lifetime threshold symptoms but did not qualify for Criterion a of PTSD thus did not qualify for a Lifetime Diagnosis of PTSD.

Table 3 summarizes the scores of the 28 subjects with regards to how much combat exposure they had. Most of the veterans only had light combat exposure (42.85%) and none had heavy combat exposure. An equal percentage of 25% each fell into light-to-moderate and moderate combat exposure. Most of these individuals were exposed in combat in Mindanao during the martial law period. (Table 3)

TABLE 3. Recapitulation of CES Scores

Combat Exposure		#	%
0-8	Light	12	42.86
9-16	Light Moderate	7	25
17-24	Moderate	7	25
25-32	Moderate Heavy	2	7.14
33-41	Heavy	0	0

An equal number of subjects (5) had sub-threshold lifetime symptoms of PTSD wherein majority of their sub-threshold symptoms were concentrated in Domain D of the PTSD Criteria and the Hyperarousal Symptoms in the CAPS Questionnaire. The second most common category of symptoms represented was that of Re-experience symptoms. (Table 4)

None of the subjects qualified for a current diagnosis of PTSD. Twenty-six (26) subjects (92.86%) were asymptomatic, while 2 (7.14%) had subthreshold symptoms based on the CAPS Questionnaire. (Table 4)

TABLE 4. PTSD Symptom Severity based on CAPS

		Current Symptoms		Lifetime Symptoms	
		#	%	#	%
0-19	Asymptomatic	26	92.86	16	57.14
20-39	Subthreshold	2	7.14	5	17.86
40-59	Threshold	0	0	3	10.71
60-79	Severe	0	0	0	0
> 80	Extreme	0	0	2	7.14

N.B. 2 subjects had threshold symptoms but did not qualify for Criterion A of PTSD & thus did not qualify for a Lifetime Diagnosis of PTSD.

TABLE 5. PTSD & Other Axis I Diagnosis using CAPS

Axis I Diagnosis			Lifetime PTSD	
	#	%	#	%
Psychotic Spectrum Disorders				
Schizophrenia	19	67.86	3	15.78
Schizo affective Disorder	0	0	0	0
Mood Disorders				
Major Depressive Disorder	1	3.57	0	0
Bipolar I Disorder	5	17.86	2	40
Bipolar II Disorder	0	0	0	0
Other Axis I Diagnosis				
Organic Mental Disorder	2	7.14	0	0
Substance Use Disorders	1	7.14	0	0
None (Previous Dx of PTSD)	0	0	0	0

The study revealed that the occurrence of PTSD symptoms among the subjects anytime in their lifetime was consistent with observations of more recent foreign-based studies that identified the prevalence of PTSD among veterans from 11.6%⁴ to 18%⁶.

A number of subjects who had a previous diagnosis of Schizophrenia (3/19 or 15.78%) and Bipolar I Disorder (2/5 or 40%) reached threshold symptoms for lifetime PTSD. Other diagnoses observed in our combat exposed veterans included Organic Syndromes (2, 7.14%) and Substance Use Disorders (1, 3.57%). (Table 5)

DISCUSSION

Given the current increase in natural and man-made disasters, the necessity to accurately diagnose and treat PTSD has never become more important than the present. The VMMC, along with the AFPMC, is assumed to have expertise on a subject such as Post-Traumatic and Acute Stress Disorder especially among military personnel.

This study showed that among the 5 subjects who could be diagnosed with lifetime PTSD, the top five most commonly occurring symptoms were (in order of hierarchy): irritability and outbursts of anger, difficulty concentrating, hypervigilance, difficulty falling asleep and intrusive recollections. All of these symptoms except for the intrusive recollections (re-experiencing symptoms) belong to the domain of hyperarousal symptoms.

This observation has a caveat. Given the long duration of illness these veterans with combat exposure have, the most frequently observed symptoms in these patients may represent the residual symptoms of Schizophrenia such as deterioration of executive functioning, conceptual disorganization, regression as well as negative symptoms such as emotional withdrawal and blunted affect Nineteen (67.85%) of these subjects had been diagnosed as cases of Schizophrenia.

Unfortunately, very few studies have documented specific symptoms, making comparisons difficult¹⁷. Most studies examine the comorbidity of PTSD with substance abuse and the suicidality of combat PTSD patients.

Solomon and Mikulincer (2006) observed the trajectories of PTSD over a 20-year period among Israeli soldiers exposed to combat in Lebanon. They observed that recurrent images and thoughts about the war was the most prevalent symptom. They further observed that re-experience and hyperarousal symptoms were prevalent during 1 to 2 years after exposure while avoidance and numbing symptoms were more prominent on the third year and thereafter¹⁸.

These observations have an impact on the recognition and diagnosis of a patient with potential PTSD at the outpatient department (OPD). Patients with known combat-exposure who have insomnia, irritable and hypervigilant, with the occasional intrusive recollections of their military experience can be assessed for PTSD.

CONCLUSION

In-Patients and Out-Patients from the VMCC Department of Psychiatry who were diagnosed with other mental disorders had a 17.85% lifetime prevalence rate of Post-traumatic Stress Disorder that was similar to worldwide trends. The study did not report any new occurrences of PTSD. The sample size needed to power a prevalence study was 25.

Limitations & Recommendations

There were several limitations in the conduct of this study. The first was that the study was purely qualitative and descriptive. No correlations between possible risk factors, thematic exposure or anamnesis details can be drawn. A longer duration for the study should be set to gather and examine data in more detail and draw more conclusions.

The population was limited to the psychiatric OPD clientele of one hospital thus involving other hospitals that handle Filipino veterans with combat experience could provide a clearer picture of the actual prevalence of PTSD.

The CAPS- Filipino version was not yet validated or pre tested with a similar population as the study population thus possibly skewing our results. There may be a need to check the translation, back translate and pre test this Filipino version with a similar male population for it to be validated.

The number of charts reviewed was not noted nor did we take note of the number of patients arising from the various sources- such as those from the Philippine Veterans Affairs Office or those for re-evaluation, thus a selection bias.

It is recommended that the VMCC Psychiatry and Family Medicine staff at our OPD as well as in the AFP Medical Center should be trained in using the CES and CAPS. The updated version based on the DSM 5 Criteria, should be administered to all retiring military personnel and new patients in order to obtain a complete database for PTSD in the Philippine military. This will also help in planning steps and designing programs on how to take care of our retiring military personnel.

The AFP should create a team with the purpose of gathering data and publishing a report on the current condition of PTSD recognition and its management in the military.

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