



# A COMPARISON OF PTSD BETWEEN BURNED COMBAT CASUALTIES AND CIVILIANS TREATED AT A MILITARY BURN CENTER



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## Abstract

**Background.** Post-Traumatic Stress Disorder (PTSD) was identified in 12-20% non-injured veterans and 32% combat casualties. In the US, about 8% of general population experience PTSD symptoms while 25.4% civilians with major burn injuries have PTSD. The United States Army Institute of Surgical Research (USAISR) Burn Center provides the same standard of burn care for combat casualties and civilians. Known predictors of physical outcomes of burn patients are age, total body surface area (TBSA) and injury severity score (ISS). We hypothesized that there is no difference in the incidence of PTSD between combat casualties and burned civilians and that there is an association between age, TBSA, ISS and PTSD.

**Method.** We retrospectively examined patient records of 1,792 admissions between Oct 2003 and May 2008. Records were stratified by PTSD, age, TBSA, and ISS. Patients were assessed for PTSD using the Post-Traumatic Stress Disorder Checklist, Military (PCL-M) and civilian (PCL-C) versions. PTSD was defined as  $\geq 44$  on the PCL instruments. Total PTSD scores of combat casualties and civilians were compared. Descriptive analyses were used.

**Results.** Four hundred ninety nine patients were assessed for PTSD, 372 military (74.5%), and 127 civilians (24.4%). There was no significant difference in PTSD incidence between combat casualties and civilians (25% vs. 17.32%,  $p = 0.761$ ). No association between age and PTSD was found. Total body surface area and injury severity score were found to be significant predictors of PTSD.

**Conclusion.** Although not significantly different, the incidence of PTSD is higher in burned combat casualties when compared to burned civilians treated with the same standard of care. This difference needs further exploration; however, might be attributed to the higher rate of explosion injury in combat casualties (80% vs 10%). The association between PTSD, total body surface area, and injury severity scores attest to the need for PTSD assessment as a standard of care in severely injured burn patients.

## Introduction

➤ The incidence of PTSD in burn patients is between 12-32%. Because of combat experiences, burned service members are thought to have a greater risk for PTSD than burned civilians.

➤ We hypothesized that there is no difference in the incidence of PTSD between combat casualties and burned civilians and that there is an association between age, TBSA, ISS and PTSD.

## Objectives

- Compare PTSD between combat casualties and civilians treated at the USAISR
- Compare PTSD with age, total body surface area (TBSA), and injury severity score (ISS)
- Examine PTSD at less than 30 days and greater than 30 days post-injury
- Compare PCL subsets between combat casualties and civilians

**Table 1. Comparison of PTSD, Combat Casualties & Civilians**

	PTSD	No PTSD
<b>Combat Casualties</b>	93(25%)	279(75%)
<b>Civilians</b>	22(17.3%)	105(82.7%)

**Table 2. Comparison of PTSD, Age, Total Body Surface Area (TBSA), Injury Severity Score (ISS)**

	PTSD	No PTSD	P-Value
<b>Age</b>	27.4 ± 9.2	29.3 ± 11.4	0.18
<b>TBSA</b>	18.7 ± 18.4	14.8 ± 16.6	0.02
<b>ISS</b>	13.8 ± 12.6	10.8 ± 11.3	0.03

## Methods

- Retrospective review of clinical records and PTSD assessments
- Study dates: Oct 03 –May 08.
- 1792 Admissions; 499 PTSD assessments (372 combat casualties, 127 civilians)
- PTSD defined as a score of  $\geq 44$  on the PTSD checklist (PCL-M; PCL-C)
- Descriptive analyses; chi square.

## Results

**Table 3. PTSD at < 30 days, > 30 days post-injury**

	PTSD	No PTSD	P value
CIV <30	10.5%	63.2%	0.265
CIV >30	6.3%	20%	0.265
MIL <30	4.4%	23.7%	0.823
MIL >30	21.8%	50.2%	0.007*

\*  $P \leq 0.05$

**Table 4: Comparison of PCL subsets between Combat Casualties and Civilians**

	Combat Casualty	Civilian	P-Value
<b>Subset 1 Re-experiencing</b>	10.31 ± 5.17	8.83 ± 14.93	0.0003*
<b>Subset 2 Avoidance, numbing</b>	12.20 ± 6.13	11.28 ± 6.26	0.0162*
<b>Subset 3 Hyper-Arousal</b>	11.33 ± 0.6	8.98 ± 5.04	0.0001*

\*  $P \leq 0.05$

## Conclusions

- PTSD was not significantly different in burned combat casualties when compared to burned civilians treated with the same standard of care at the USAISR
- The risk of PTSD is perceived as different in combat casualties than civilians because of combat experiences. Although some of the difference may be attributed to combat, we found that the higher rate of PTSD in combat casualties was associated with the severity of the injury received in combat (ISS and TBSA).
- The symptom most often reported on the PTSD assessments by both combat casualties and civilians was avoidance or numbing. This finding may be attributed to the burn injury itself.

## References

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