

Post-Deployment Combat Attachment Behaviors and PTSD Diagnosis in Service Members Accessing Specialty Care: Development of a Construct

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BACKGROUND

- Deployment to a war zone has been associated with clinical and functional consequences.¹
- Studies show that while only 12-13% of infantry combat veterans were diagnosed with Posttraumatic Stress Disorder (PTSD), 2-49% of OIF/OEF war veterans reported significant post-combat stress symptoms.²
- Subclinical symptoms of PTSD in veterans seen in primary care were associated with lower mental and physical health functioning relative to those without PTSD, but not as low as patients with PTSD.⁴
- Previous research in Vietnam veterans at a Veterans Affairs Medical Center suggested that a high percentage of PTSD patients reported a cyclical pattern of re-experiencing "pleasurable, arousing" memories of the combat "high" or "rush", followed by feeling down; Solursh termed this "combat addiction".⁵
- Recent case review findings in active duty service members diagnosed with PTSD indicated that patients reported spending considerable amounts of time experiencing stimulating, rewarding combat-related thoughts/images/memories accompanied by the 'adrenaline rush', termed "combat attachment". These behaviors appeared to have addictive characteristics and were associated with social and/or occupational impairment.⁶
- We theorize that combat attachment phenomenology may represent a "hidden variable" important in understanding post-deployment consequences, utilization of care, and treatment outcomes.
- Campbell et al.'s case review regarding combat attachment behaviors and possible consequences⁶ were expanded by considering all service members consecutively referred in a two year cohort, and comparing those diagnosed with PTSD vs. those not diagnosed with PTSD, but who were manifesting "subclinical" symptoms.

METHODS

- Retrospective case series review was derived from 120 active-duty Marines and Sailors consecutively referred over a two year period to the embedded psychologist at the Concussion Clinic of a large Military Treatment Facility for evaluation and treatment of co-existing mental health symptoms.
- The case series excluded 14 patients referred for civilian concussions, and six patients who did not complete the intake.
- The remaining 100 patients included 64 who were diagnosed with PTSD in the electronic medical record, and 36 who were not; all had deployed to Iraq and/or Afghanistan.
- Patients were administered the standard PTSD Checklist (PCL-M) at intake and three pilot structured clinical worksheets to assess characteristics of combat attachment behaviors.

 - Post Combat Checklist:** Modified PCL-M which included an additional eight questions mirroring the first eight questions referencing a "stressful" experience, but re-worded to refer to stimulating, potentially rewarding combat experiences, (administered at intake, N = 100).
 - Combat Attachment Behavioral Worksheet:** Assessed frequency and time spent in various combat attachment behaviors (e.g., watching war movies, playing combat-related videogames), and estimated average total time spent/day, compared to estimated average total time spent/day in re-experiencing distressing combat experiences (administered during treatment, N = 78).
 - Combat Attachment Impact Worksheet:** Adapted ten addiction items from DSM-IV-TR, referencing combat attachment behaviors rather than substance use or gambling (administered during treatment, N = 78).

RESULTS

- Total Group of 100 Patients**
- On the **Post Combat Checklist** presented in Table 1, similarly high responses were demonstrated for re-experiencing and avoidance items and corresponding exciting, positive items (endorsed at "3-Moderately" or above, from scale 1-5).
- Summary scores (calculated by adding raw scores for each item, range 8-40), were equivalent for stimulating, rewarding experiences and distressing combat experiences, and averaged 24.6 for stimulating, rewarding combat-related experiences vs. 24.0 for distressing combat experiences (paired t-test, $p=0.40$, NS).
- Table 2 presents **Combat Attachment Behavioral Worksheet** items and responses, indicating that patients reported spending a great deal of time engaged in multiple rewarding, stimulating combat-related activities accompanied by the 'adrenaline rush'.
- Overall, patients reported spending more time engaged in stimulating, rewarding combat-related behaviors than in distressing behaviors, averaging 4-5 hours/day vs. 1 hour/day, respectively.
- On the **Combat Attachment Impact Worksheet** (Table 3), roughly two thirds of the total group endorsed at "3-Moderately" or above on each of the ten individual items except "Trying to cut down", which was endorsed by less than a third of the group.
- Over 80% endorsed at least five of the ten addictive items, and almost 95% endorsed at least one item indicating physiological dependence, either a tolerance or a withdrawal item (items #4-7).

Table 1. Total Group Post-Combat Checklist Responses (N = 100) (Items Endorsed at 3-Moderately or Above)

ITEMS	%	ITEMS	%
1a. Repeated, exciting memories, thoughts or images of combat?	87%	1b. Repeated, distressing memories, thoughts or images of a stressful combat experience?	74%
2a. Repeated, exciting dreams involving combat?	47%	2b. Repeated distressing dreams of a stressful combat experience?	55%
3a. Suddenly acting or feeling as if a positive/exciting combat experience were happening again (as if you were reliving it)?	51%	3b. Suddenly acting or feeling as if a stressful combat experience were happening again (as if you were reliving it)?	54%
4a. Feeling excited when something reminded you of a combat event?	76%	4b. Feeling very upset when something reminded you of a stressful combat experience?	69%
5a. Feeling "a rush" of physical reactions (e.g. heart pounding) when something reminded you of a positive/exciting combat event?	74%	5b. Having distressing physical reactions (e.g., heart pounding, trouble breathing, sweating) when something reminded you of a stressful combat experience?	71%
6a. Deliberately thinking or talking about positive/exciting combat experiences?	72%	6b. Avoiding thinking or talking about a stressful combat experience or avoiding having feelings related to it?	74%
7a. Seeking out activities or situations because they reminded you of positive/exciting combat experiences?	42%	7b. Avoiding activities or situations because they reminded you of a stressful combat experience?	53%
8a. Remembering exciting combat events in especially vivid detail?	67%	8b. Trouble remembering important parts of a stressful combat experience?	53%
Sum	Mean (SD) sum of raw scores for items #1a-8a: 24.6 (6.8)	Sum	Mean (SD) sum of raw scores for items #1b-8b: 24.0 (7.2)

Instructions: Below is a list of behaviors that combat veterans may experience after deployment. Use the below scoring to indicate how much you experienced each item in the past month: 1-Not at all, 2-A little bit, 3-Moderately, 4-Quite a bit, 5-Extremely

Table 2. Combat Attachment Behavioral Worksheet Total Group Mean (SD) Responses (Instructions below)^a

Items	Number endorsing/N	Mean hours/SD
1. Daydreaming or thinking about combat when bored or when performing routine, everyday activities (daily chores, waiting for appointments, boring tasks at work)	78/78	2.4 (1.5)
2. Thinking about combat while driving	77/78	1.4 (1.1)
3. Talking with combat veterans about deployments	76/78	2.1 (1.7)
4. Going through your own combat photos/videos, or those online (Facebook or Youtube)	68/77	1.4 (1.0)
5. Playing combat-related videogames (Call of Duty, Battlefield, etc.)	41/77	2.4 (1.1)
6. Watching war movies, combat-related TV shows, or reading books about war	72/77	2.2 (1.2)
7. Cleaning or operating weapons, going to the shooting range, or hunting	50/77	2.7 (1.9)

^a Instructions page 1: "For each of the listed behaviors, please indicate how many days out of the past 30 days you engaged in each behavior and re-experienced the adrenaline "rush" and exciting/positive feelings associated with combat. Then, mark the average amount of time you engaged in that behavior on a typical day."
^b Mean hours refers to those patients who endorsed that activity.

Comparison of PTSD vs. Non-PTSD Diagnosed ("Subclinical") Groups

- The PTSD group had significantly higher PCL-M scores (63.6 vs. 50.8, rank-sum test, $p<.001$); significantly higher percentage diagnosis of Depression (68.8% vs. 13.9%, Fisher's exact test, $p<.001$); significantly more deployments (2.4 vs. 1.5, rank-sum test, $p<.001$); and significantly more Behavioral Health sessions (29.6 vs. 9.2, rank sum test, $p<.001$) than the Non-PTSD Diagnosed group.
- On the **Post Combat Checklist**, the PTSD group compared to the Non-PTSD Diagnosed group were (Figure 1):
 - Equivalent on summary score for stimulating, rewarding combat-related experiencing (25.3 vs. 23.2, rank-sum test, $p=0.12$).
 - Significantly greater on the distressing re-experiencing summary score (26.4 vs. 19.7, rank-sum test, $p<.001$)
- On the **Combat Attachment Behavioral Worksheet**, the PTSD group compared to the Non-PTSD Diagnosed group were (Figure 2):
 - Not significantly different for average number of hours spent per day in combat attachment behaviors.
 - Greater (approaching statistical significance) on average number of hours spent in distressing combat behaviors per day (1.2 vs. 0.7 hours, rank-sum test, $p=.06$).
- On the **Combat Attachment Impact Worksheet**, the PTSD group compared to the Non-PTSD Diagnosed group were (Figure 3):
 - Significantly greater on percentage of patients endorsing five or more of the ten addiction items (88.7% vs. 70.8%, Fisher's exact test, $p<.05$)
 - Significantly greater on percentage of patients endorsing at least one item of tolerance **and** at least one item of withdrawal (81.5% vs. 50.0%, Fisher's exact test, $p<.05$).
 - Not significantly different on percentage of patients endorsing at least one item of physiological dependence - either one item of tolerance or one item of withdrawal (98.1% vs. 87.5%, Fisher's exact test, $p=.08$).

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Figure 1. Comparison of Post Combat Checklist Summary Scores across Groups

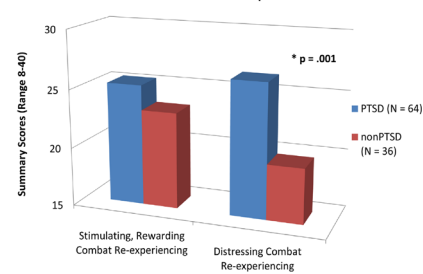


Figure 2. Combat Attachment Behavioral Worksheet Responses across Groups

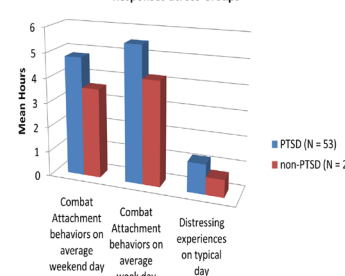
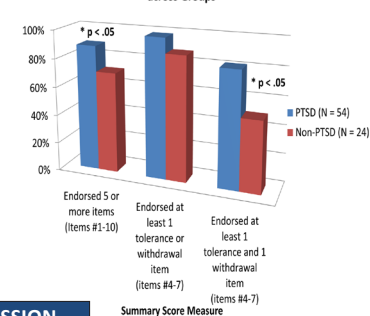


Figure 3. Combat Attachment Impact Worksheet Responses across Groups



DISCUSSION

- This case series review has methodological limitations but serves as an exploratory first step to investigate combat attachment phenomenology, a possible "hidden variable" with considerable clinical implications.
- The total cohort of 100 combat veterans reported spending more time engaged in combat-related behaviors that were stimulating and rewarding, than those deemed distressing (roughly four to five hours/day vs. one hour/day, respectively), and a high percentage endorsed addictive-type symptoms related to combat attachment behaviors.
- The Non-PTSD diagnosed ("subclinical") patients were similar to PTSD patients for reported degree of stimulating, rewarding experiencing of combat-related memories, but they reported significantly less combat-related distressing symptoms, and engaged significantly less in behavioral health treatment than PTSD patients.
- Findings suggest the need for further investigation and greater consideration of these hidden issues, with exploration of the relationship between combat attachment behaviors, development of PTSD, and post-deployment symptoms and consequences.

Table 3. Total Group Combat Attachment Impact Worksheet Responses

Items	# Endorsed at "Moderately" or Above/N (Percentage)
1. Difficulties fulfilling obligations in your career/occupation/schoolwork? (e.g., missing days, being late, not motivated, concentration problems, not completing tasks)	52/77 (67.5%)
2. Difficulty fulfilling obligations in your family/home life? (e.g., conflict with family members, irritability or neglect of spouse/children, withdrawal)	52/77 (67.5%)
3. Continuing to engage in exciting/positive combat related activities despite negative consequences (e.g., arguments, mood swings, isolation)?	59/76 (77.6%)
4. ^b Having to spend more time or increase the intensity (up the ante) of exciting/ positive combat related activities to experience the same "high"?	52/78 (66.7%)
5. ^b Finding that the same amount or intensity of exciting/positive combat related activities doesn't produce the same (desired) result?	49/75 (65.3%)
6. ^c Feeling restless, irritable or depressed when unable to engage in exciting/positive combat related activities, or when trying to cut down or stop engaging in them?	58/77 (75.3%)
7. ^c Finding substitutes if you couldn't spend time engaging in exciting/positive combat related activities (e.g., excessive working out, speeding in your vehicle, picking a fight)?	59/78 (75.6%)
8. Trying to cut down or stop engaging in exciting/positive combat related activities?	24/76 (31.6%)
9. Spending a great deal of time engaged in or preoccupied with exciting/ positive combat related activities?	48/77 (62.3%)
10. Covering up or keeping secret the amount of time you spend engaged in exciting/positive combat related activities?	48/77 (62.3%)

Instructions: Below is a list of statements that may be related to engaging in exciting/positive combat thoughts and activities, accompanied by the "adrenaline rush". Please rate each item according to how you experienced each in the last 12 months (or since returning from combat, if less than 12 months) because of engaging in exciting/positive combat thoughts and activities." (1-Not at all, 2-A little bit, 3-Moderately, 4-Quite a bit, 5-Extremely)
^b Tolerance item
^c Withdrawal item