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Thematic Oral Poster Session 6 – Psychological and cognitive considerations

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Self-reported combat-related symptom scores change after witnessing a teammate's improvement following stellate ganglion block for post-traumatic stress symptoms

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Purpose: The purpose of this study was to highlight the dramatic effect on self-reported symptoms of post-traumatic stress disorder (PTSD) after witnessing improvements in a teammate's symptoms following treatment with stellate ganglion block (SGB).

Methods: In a larger study of 166 U.S. Special Operations combat veterans, we demonstrated statistically and clinically significant improvements in PTSD symptoms following administration of SGB.[1] Change in PTSD Checklist-Military (PCL-M) was the primary endpoint. A retrospective analysis of this cohort demonstrated notable changes in self-reported symptoms from a subset of 20 teammates whose initial PCL-M screening tests were negative upon redeployment from combat. During standard post-deployment screening, PCL-M was administered to 20 members from one unit returning from combat. These initial PCL-M scores were compared to subsequent screening scores after one team member shared his experiences with successful SGB treatment.

Results: The mean PCL-M score upon redeployment was 23.7, which is well below the screening threshold for PTSD. However, following one team member's SGB procedure, this same group of 20 service members was rescreened 3 weeks later. At that time their average PCL-M score more than doubled to 48.25, identifying them for further evaluation and treatment by the unit behavioural health team (Paired *t*-test, $p < 0.05$).

Conclusions: Acceptable treatment options affect the utility of self-reported screening tools. Overcoming the stigma of behavioural health issues is critical to treatment for PTSD. If service members do not believe that help is possible for their condition, or if the help is perceived as unacceptable (e.g. talking with unfamiliar behavioural health personnel, drugs with adverse effects), then they are reluctant to report their symptoms. This study suggests that witnessing a close contact whose PTSD symptoms improved following SGB dramatically altered scores on rescreening questionnaires. SGB was perceived to be an effective and acceptable treatment, and more honest reporting resulted in treatment of additional appropriate candidates. Moreover, SGB served as a potent facilitator of continued behavioural health treatment plans. Our results reinforce that many military members routinely under-report their symptoms because either (1) they perceive PTSD treatments to be unacceptable or (2) the stigma of self-reporting PTSD symptoms remains a barrier to care. The authors stress that SGB is not a stand-alone treatment for PTSD, but it may facilitate further treatment.

Reference

1. Mulvaney et al. *Mil Med* 2014; 179(10):1133–1140.

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Using a controlled virtual reality simulation platform to induce, measure and feedback stress responses of soldiers

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Introduction: Dealing with high levels of emotional, cognitive and/or physiological stress is an essential skill of soldiers. The increasing development of both gaming and simulation technology and applied miniaturized sensors and monitoring technology represents a great opportunity for advancing performance in physiological and psychological resilience of employees that might experience high levels of stress during their deployments. Therefore, the Dutch Ministry of Defence launched a research program that combines these new technologies to improve the Forces' capability of stress training and stress evaluation environments. To this aim, a simulation, gaming and measurement environment was developed containing a controllable Virtual Reality Monitoring (VRM) platform.

Methods: The VRM platform comprises the oculus rift goggles to simulate the stress and task environment of a military patrol mission, muscle stimulation equipment that generated a pain sensation to increase stress and distraction from the task, apparatus to