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Letter to the Editor

Continuing education for tourniquet application by laypeople

We read with interest the study by McCarty et al. assessing whether different levels of self-reported prior training [no training, First-Aid training only (FA), and First-Aid plus Hemorrhage Control training (FA + HC)] were associated with correct tourniquet application among laypeople [1]. In this five-month subset analysis of a larger prospective randomized controlled trial, 317 employees of a stadium were assessed via simulation in their ability to apply a tourniquet. When comparing correct tourniquet application in subjects with no prior training to subjects with only FA training, there was no difference between no prior training (n = 16/111, 14.4%) and FA training (n = 35/139, 25.2%) (p = 0.11). In the adjusted logistic regression model, with no prior training as the reference group, those with FA training had 2.12 higher odds (95%CI:1.07-4.18, p = 0.03) of correct tourniquet application and those with FA + HC training had 3.50-higher odds (95%CI:1.59-7.72, p = 0.002). We totally agree with the authors when they state that "this study provides insight into the potential efficacy of the general population to correctly administer time sensitive HC in the form of tourniquet application.". In fact, there is a growing body of evidence that tourniquet application is an effective tool for the management of extremity hemorrhages in civilian trauma, associated with few complications [2]. But, in the study by McCarty et al, beyond the prior initial trainings and their retention, after 3 to 9 months, little is known about the best way to improve tourniquet application skills' retention over the time. In military setting, a recent simulation-based study analyzed the impact of a refresher training session on the performance of tourniquet application [3]. In this monocentric, controlled, and single-blind prospective experimental study of 50 healthy volunteers, a refresher tourniquet training session, conducted directly in a combat zone, was especially effective for soldiers whose last training session was over six months prior. Indeed, a dedicated performance score (one to seven points, including delay and effectiveness of tourniquet application), increased from 4.2 (SD = 1.4) to 5.5 (SD = 0.9, p = 0.002) in subjects who underwent a refresher training session, when the last training for tourniquet application was over six months prior. However, conducting a continuing HC training program of layperson, mainly based on simulation, may be challenging and costly; and more especially, when it deals with general population, even if the goal is to "attain a critical threshold, in order to reach a "herd immunity" such that at least one individual would have the necessary skills to stop bleeding" [4]. To address similar issue, the French Military Medical Service developed and deployed 3D-SC1®, a serious game intended to train and assess soldiers managing the early steps of the French Forward Combat Casualty Care program, also called "Sauvetage au Combat". In 3D-SC1®, much attention is paid to HC procedures, including correct tourniquet application. Assessed in a hands-on simulation-based study, a supplementary training with 3D-SC1® was associated with improved performance for bleeding control interventions [5]. To conclude, we would like to know if the authors could provide their opinion regarding the most effective layperson education techniques to consider for the development of an adequate continuing HC training.

Conflict of interest statement

All authors declare no conflict interest.

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