

1-2020

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Recommended Citation

O'Shea, James and Miller, MD, MPH, Stanton, "The Use of Wearable Technology in the Detection of Operator Fatigue" (2020). *Phase 1*. Paper 27.

https://jdc.jefferson.edu/si_ctr_2022_phase1/27

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SI/CTR Abstract

The Use of Wearable Technology in the Detection of Operator Fatigue

James O'Shea, Stanton Miller MD, MPH*

Introduction: Operator fatigue is a prevalent cause of injury and death. Many studies have proven reliable ways of determining operator fatigue through the use of engineering and technological advances including blink rate, lid lag, respiratory rate, cardiac rate, chest expansion, etc. However the implementation of these advances has yet to be utilized. This systematic literature review seeks to elucidate the need for implementation of wearable technology for those who suffer from operator fatigue.

Methods: The target population includes anyone who operates a vehicle including drivers, aviation pilots, train conductors/engineers, marine pilots, operators of heavy machinery, fishermen and professional/overnight drivers. All technological and engineering interventions used in the detection of operator fatigue will be analyzed with successful detection of driver fatigue being the outcome. Data is being compiled from PubMed, Scopus, Cochrane Library and TRID.

Results: We are in the process of publishing a preferred reporting items for systematic review and meta-analyses protocol (PRISMA-P). In addition, the results from each database suggest wearable technology is successful in detecting operator fatigue.

Discussion: The PRISMA-P is a necessary step to provide validity for a systematic literature review to show we aren't manipulating parameters to skew our results. Upon publishing this, we anticipate that our PRISMA P will further support the need for a systematic literature review on the use of wearable technology in the detection of operator fatigue.