



Implications for gambling prevention strategies in firefighters

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Received: 28 June 2020. Accepted: 17 September 2020; Published: 25 December 2020.

doi: 10.21037/jphe-20-61

View this article at: <http://dx.doi.org/10.21037/jphe-20-61>

Firefighters ensure and protect public health safety by responding to hazardous emergency situations in direct comparison to other emergency medical technicians such as paramedics. Secondary to this, protecting the health of the firefighter population is a top priority, which ultimately leads to the protection of the health and safety of the public. Even though previous work by our team shows that firefighters are exposed to acute physical and chemical hazards including injury, smoking, and cardiorespiratory fitness decline (1-3), until recently there has been a paucity of research addressing problematic gambling in the firefighting service (4). Today, gambling problems are pronounced in the fire service due to shift work induced stress, job duties, and occupational hazard and danger (5). Despite limited statistical reports about the number of firefighters with gambling addiction in the U.S., there is an upward trend of gambling addiction prevalence in the Australian fire service (4). Previous research has found that 2% of U.S. military personnel report gambling problems, twice as high as in the general population (6). Considering that gambling is an alternative way to cope with stress among high-stress demanding occupations, the similar upward trend of gambling problems amongst U.S. firefighters could be expected to be in line with that of U.S. military personnel. Developing a gambling addiction not only significantly increases one's risk for mental health disorders and progression of other addictive behaviors, but it may also majorly compromise the integrity of one's overall health status. Moreover, it has been shown that firefighters with gambling problems suffer from decreased work performance, which may lead to permanent physical and mental health disabilities, such as post-traumatic stress disorder (PTSD) or death, including the death of

themselves or the person whom they are attempting to rescue. Each of these scenarios may have profound negative effects on firefighters' health outcomes and ultimately, public health safety. Greater clarity in understanding the development of gambling behaviors among the firefighter population will bolster the development of effective countermeasures and interventions that would improve firefighters' health conditions and mental status, ultimately creating greater opportunities to save lives.

Previous research on gambling addiction has advanced the literature base for understanding the relationship of gambling problems with mental health disorders (e.g., depression) and addictive behaviors (e.g., binge drinking) (4). However, these two critical questions remain unclear: (I) why are emergency service workers underrepresented in statistical analyses on gambling problems accompanied by mental health disorders and addictive behaviors; (II) are there interventions that have been developed to stop such problems arising in firefighting communities. Although there is a well-documented relationship between gambling problems, mental health disorders, and other addictive behaviors in firefighters (4), studies do not explain how or why gambling exposure and participation contributes to the development of these issues. Additionally, research that clearly and accurately characterizes the variety of factors that contribute to the development of problem gambling is scarce. Moreover, it is not clear how gambling exposure and engagement at gambling venues develops into an addiction with deleterious effects on mental health outcomes and behaviors. Therefore, a deeper understanding about individual variables and eco-developmental themes of gambling addiction is valuable to initiate early interventions to reduce problematic gambling that may lead to mental

health disorders and addictive behaviors in firefighters (7). These acquired addictive behavior outcomes must be analyzed and discussed within the context of intrapersonal (e.g., knowledge, attitude, and behavior) and interpersonal (e.g., peer influence, socioeconomic status, and family structure) correlates. The multidirectional social-ecological levels (intrapersonal and interpersonal), domains (peers and family), and social-environmental interactions (support or conflict) may holistically shape gambling addiction comorbidities with mental health disorders and other addictive behaviors. As such, a social-ecological framework that explains behavior integrations and changes within the context of individual and contextual variables is required for systematically framing gambling addiction that is also associated with mental health disorders and addictive behaviors in the fire service (8).

Previous research has shown comorbidities of gambling problems with other mental health issues and addictive behaviors like substance use problems (9). This finding demonstrates that the regulation of distress through gambling is in relation to mental disparities. The co-occurrence of mental disorders and addictive behaviors could be explained by peer influence amongst the fire service. Additionally, evidence demonstrates that gambling problems may be accompanied by clinical mental health disorders including psychiatric disorders, namely problem gambling (10). Overwhelmingly, firefighters reporting gambling problems experience a high risk for deteriorated mental health status and acquired addictive behaviors. These data support the role of screenings for problematic gambling and may be ideal for identifying high-risk firefighters with potential mental health issues and addictive behavior problems. The social-ecological framework refers to the surroundings of the individual of interest (8), that is, the interaction between environment and relationships among people. Those relationships and the effects on their lived environment are not only shaped physically (e.g., structure), but also politically and culturally (e.g., cultural and religious beliefs). For example, the macho culture of remaining silent and stopping complaints toward mental disorders and addictive behaviors in the fire service may greatly contribute to their gambling development that is used to release the pressure. Such macho culture of keeping silent also discourages firefighters to reach out for help. Using the social-ecological conceptual framework to characterize gambling problems may inform the intervention strategies like consulting programs and on-the-job site support that seek to leverage multidirectional facets

of individual and contextual determinants to reduce risky gambling contexts for on-duty firefighters. Such prevention initiatives coupled with improving mental health conditions and reducing addictive behaviors could significantly decrease the risk of gambling addiction in the fire service.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was a free submission to the journal. The article was sent for external peer review.

Peer Review File: Available at <http://dx.doi.org/10.21037/jphe-20-61>

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <http://dx.doi.org/10.21037/jphe-20-61>). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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doi: 10.21037/jphe-20-61

Cite this article as: Gao X, Deming NJ, Moore K, Cavalier AN. Implications for gambling prevention strategies in firefighters. *J Public Health Emerg* 2020;4:40.