

Integrating Fitness Equipment in Persistent Traumatic Stress Environments for Reducing Drug Overdoses

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Abstract

According to a 2024 report from the World Health Organization, substance use disorders have contributed to more than 3 million annual deaths worldwide. Combining outdoor fitness equipment in persistent traumatic stress environments can lead to a reduction of accidental drug overdoses. Individuals who experience complex post-traumatic stress disorders are susceptible to substance use disorders. Weight training has been shown to be effective at healing trauma. The development of self-efficacy from exercise can aid in abstinence from substance use and result in sustained remission.

Francisco primarily looked toward harm reduction education to address SUD. In Los Angeles, a study found that there was a 10% increase in abstinence from drug use following an exercise intervention, compared to harm reduction (6). That study included resistance training as the exercise intervention. Theoretical framework from the self-efficacy theory is included in this article.

Introduction

According to a 2024 report from the World Health Organization (WHO), substance use disorders (SUD) have contributed to more than 3 million annual deaths worldwide (1). In the United States, the country with the largest accidental overdose rate in the world, there has been a 3% decrease in overdose deaths in 2023, compared to 2022 (2). However, in San Francisco, there was a 12.5% increase in overdose deaths in 2023 compared to 2022. In this article, the city of San Francisco will be highlighted. Installation of fitness equipment occurred in an area of the city with the most drug activity on November 8, 2023. As of August 2024, 98 less people have died from accidental overdose deaths compared to the previous November, through July (3). Two SUD that are responsible for most deaths in San Francisco include stimulant use disorder and opioid use disorder.

The aim of this commentary is not to suggest that access to outdoor fitness equipment (OFE) should solely be the focus for ameliorating accidental overdose deaths, but to connect the need for integrating access to fitness equipment when addressing SUD. The United Nations has declared that it is a human right to have access to fitness equipment, sufficient for maintaining good health as related to maintaining an adequate quality of life (4,5). Prior to November 2023, the city of San

Development of Substance Use Disorders

From the 10 classes of substances mentioned by the American Psychiatric Association (APA), opioid use disorder and stimulant use disorder will be primarily discussed, as opioid and stimulant use has led to the greatest amount of overdose deaths. The development of substance abuse usually begins between the ages of 13 through early 20s (7). Age 13 also is the cutoff age for someone to be allowed to exercise on playground structures in San Francisco. Without access to a place that promotes healthy bodies, while reducing anxiety and relieving stress, like an area with OFE, young adults are susceptible to environmental risk factors. The APA mentions predictors of substance use, which include violence in the community and risk factors of living in an unstable environment (7). With more access to drugs and harm reduction supplies for drug use rather than access to fitness equipment to reduce the stress and anxiety, the development of SUD can advance in its severity from mild (with two to three symptoms) to severe (with the presence of six or more symptoms). A qualitative study found that people with SUD have expressed interest in exercise, despite the structural barriers of not having access to OFE (8).

Continuous Collective Trauma

Post-traumatic stress disorder (PTSD) is the most common diagnosis for trauma, and trauma is strongly correlated with SUD (9). Complex post-traumatic stress disorder (CPTSD) was newly adopted by the WHO in the *International Classification of Diseases*, 11th revision. Where PTSD includes individuals who have experienced past trauma, CPTSD includes individuals who experience persistent traumatic stress environments. The development of CPTSD occurs as individuals are continuously exposed to trauma such as chronic domestic violence, various types of abuse, and health inequities. Repeated traumatic

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events and the collective state of ongoing pain have been shown to lead to persons coping with substance use (10). Essential features of CPTSD include persistent shame, feelings of defeat, and worthlessness. CPTSD symptoms, which include anxiety, depression, and issues with sense of self-worth, can be improved if individuals with SUD have access to weight training. A qualitative study with 46 subjects provided insight on how weight training can heal trauma and develop a sense of self-worth (11). Participants in the study mentioned feeling “powerful, competent, and capable” after weight training workouts. The development of self-efficacy for the participants transferred from weight training into other areas in life as well. That study demonstrated the important need for integrating access to fitness equipment to aid in a successful recovery.

Self-Efficacy

Due to neuroplasticity, the brain can rebuild, adapt, and change based on our experiences. According to the self-efficacy theory, the four major sources of performance accomplishments, vicarious experience, verbal persuasion, and physiological states are emphasized elucidating the psychological changes that can occur (12). Development of self-efficacy comes from observing others and taking mental notes; then, while the individual is alone, they are motivated to try what they have observed. In the example of performing a pull-up, each day an individual attempts a pull-up, they evaluate their efforts. Attentional, retention, motor reproduction, and motivational processes occur when learning from observation (13). Modeling stimuli and observer characteristics in the attentional process include a functional value and arousal level for the individual. Extending to the retention process, a symbolic and motor rehearsal occurs, leading toward an individual testing their physical capabilities in the motor reproduction process. Self-reinforcement is included in the final motivational process of observational learning.

In the face of adversity, individuals with substance disorders can develop personal efficacy by having access to OFE in their local parks or neighborhoods. If an individual has never developed the sense of freedom of choice to participate in exercise to reduce health risks, the negative connotation of blame for unhealthy behaviors should not be placed on individuals without access to fitness equipment (14). When one has developed self-efficacy, they have the belief that they have the skills required to reach specific goals. The development of self-efficacy occurs when the health of an individual improves. This development of self-efficacy is important as it provides a sense of control, showing that one can acquire unknown skills for other goals. Having OFE in a public open space or park will lead to an individual investing their time into long-term positive health choices.

Conclusion

Due to CPTSD, some individuals develop into adulthood with dissimilar perceptions of their ability to have control over their own quality of life. When a person has a sense that they have the freedom to choose what actions they can take toward managing their standard of health, it can transfer to setting long-term goals, such as pursuing higher education and persevering through an ongoing traumatic environment. Transferred skills obtained from exercise skill self-efficacy development can cultivate a vivid visualization for an ideal successful future. When park activity has been observed, pulling equipment was the most used piece of exercise equipment (15). With many

cities being densely populated, there may not be room for multiple exercise stations. A pull-up bar is a cost-effective piece of OFE that promotes healthy physical activity for those who cannot afford a gym membership. The pull-up bar can stand 6 ft tall and be made of steel, coated with a hot-dip galvanization. Due to the material and coating of this bar, it will require little maintenance, have an extremely long-lasting life, result in a low project cost, and have high strength. In early remission of substance use, the solution to providing a space for having the freedom of choice in a densely populated area can start with a pull-up bar. Lost contact with support services providing access to fitness equipment has been a reported barrier for sustained remission among people with SUD (16). Integrating access to fitness equipment in persistent traumatic stress environments can give individuals with CPTSD another outlet to work through trauma and reduce accidental drug overdoses.

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