The Role of Physical Activity on COVID-19 Cases and Deaths: A State-Level Analysis

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Relevance and Significance. COVID-19 has had devastating health effects around the world. Of secondary, albeit still meaningful, importance is the economic impact of the virus and associated shutdowns. Sport is no exception (Parnell et al., 2020).

Review of relevant literature. Much of the scholarship related to COVID-19 and sport focuses on the negative impact on large scale events (Parnell et al., 2020), opportunities for new ways of sport delivery (Miles et al., 2020), and ways to resume sport safely (Ludvigsen et al., 2020). Related to this work is a focus on how COVID-19 impacts physical activity participation (Tison et al., 2020; Woods et al., 2020).

Largely missing from this analysis is consideration of how sport and physical activity participation might negate the impact of COVID-19. Physical activity has a host of psychological and physical benefits (Warburton et al., 2019) and can buffer the negative psychological effects of COVID-19, such as the psychology of physical distancing (Callow et al., 2020).

Purpose. The purpose of this study was to examine the relationship between physical activity participation at COVID-19 cases and deaths at the state level in the US.

Methods and Results. All data were collected at the state level of analysis from publicly available sources. COVID-19 data were collected from the USAFacts website (the same source the Centers for Disease Control and Prevention use) and converted to cases per 100,000 residents and deaths per 100,000 residents. Physical activity participation was gathered from the Robert Wood Johnson supported County Health Rankings website. Control variables included the percent of state residents who were women, age 65 or older, were Black, and who lacked insurance – all factors associated with COVID-19 cases and deaths (Liu et al., 2020; Shah et al., 2020; Wenham et al., 2020; Woolhandler & Himmelstein, 2020).

Regression analysis was used to examine the relationships. The controls accounted for 24% of the variance (p = .04) in COVID-19 cases. After accounting for these effects the percent of state residents who were physically active explained a unique 17% (p = .001). As activity levels increased, the percent of COVID-19 cases decreased.

For COVID-19 deaths, the controls accounted for 36% (p = .001) of the variance, and physical activity accounted for an additional 8% (p = .02). As physical activity increased, COVID-19 deaths decreased.

Discussion and Implications. There is still much to learn about COVID-19 and its impacts. This study contributes by showing one potential factor that might help offset cases and deaths: physical activity. The findings contribute to other research showing the many physical, psychological, and social benefits of sport and physical activity.

Sport managers can work with city, community, and state officials to make sport accessible for all, working to ensure that the benefits of sport are widespread.