

# P-42 | Differential Impacts of COVID-19 on Physical Activity, Social Activity, and Mental Health by Population and Neighborhood Characteristics

**Background and Purpose:** There has been a surge of studies addressing COVID-19 impacts. However, the potential roles of the neighborhood environment and the underlying disparities have not been sufficiently examined. Also, most prior studies focus on a specific outcome, and there are limited studies that explore the cumulative effects of COVID across different domains of health such as physical, social, mental, and behavioral health.

To contribute to addressing the aforementioned knowledge gaps, this study focuses on the COVID-19 impacts on four interrelated outcomes including moderate-to-vigorous Physical Activity (MVPA), sedentary, social activity (SA), and mental health. The objectives are to (1) analyze features of the neighborhood environment that can mitigate the negative impact of COVID-19; and (2) explain differential roles of various neighborhood features for the four target outcomes.

**Methods:** A statewide online survey to explore the impacts of COVID-19 on active living and health was conducted by 1,315 adults living in Texas from May to August 2020. For both objectives, we used 4 logistic regression models to predict the probability of negative changes in 4 outcomes. They are specified based on the socio-ecological model frame including socio-demographics, economic condition, health condition, personal preference, neighborhood environment, and COVID-19-related factors.

**Results:** Controlling for socio-demographics, economic condition, health condition, personal preference, and COVID-19-related factors, environmental factors were significantly correlated with COVID-19 impacts. Those who used home-based locations (i.e. home: OR=0.60, yards: OR=0.63) for PA before COVID-19 were less likely to be negatively impacted by the pandemic, while those who used neighborhood-based locations (i.e. streets: OR=1.84, natural areas: OR=1.54, gyms: OR=1.45) were more likely to be impacted. Those living in neighborhoods with strong social cohesion (OR=0.62), quietness (OR=0.69), and spaces for social distancing while engaging in PA (OR=0.60 for sedentary; OR=0.68 for SA) were less likely to be impacted by COVID-19, while those who worry about stray dogs (OR=1.39) and traffic safety (OR=1.53) were more likely to be negatively affected. Variability is also found in the specific environmental attributes impacting different COVID-19 impact outcomes.

**Conclusions and Implications for Practice and Policy:** Results suggest the potential role of neighborhood environments in mitigating COVID-19 impacts. Due to the increased risk perceptions, the ability to maintain social distancing while engaging in PA and the sense of safety, privacy, and quietness appear important to create communities that are more resilient to pandemics like COVID-19 in the future.



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