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“Association between Physical Activity and Alcohol Use in People Living with HIV”

Background: Evidence suggests Physical activity (PA) as a promising alternative to reduce alcohol use and misuse. This is important among people living with HIV(PLWH), a population with low PA rates and higher drinking rates than the general population. Alcohol misuse can cause a decreased function of the immune system, increased susceptibility to comorbid diseases, and can interfere with antiretroviral adherence leading to exacerbation of HIV symptoms among PLWH. We aimed to measure the association of PA and alcohol use in a national cohort among people living with and without HIV.

Methods: Data from the National Health and Examination Survey (NHANES) 2017-2018 (n=5839, HIV- participants) and 2013-2018 (n=54, PLWH) were analyzed. The PA variables of interest included exposure to vigorous recreational activities in a typical week, total vigorous minutes of PA in a week, and same measures for moderate activity. The alcohol use outcome variables included average number of alcoholic drinks/drinking day, total number of times binged in past 30 days, binge in past 30 days, and heavy drinking in past 30 days. Additional variables included adherence to the recommended PA guidelines, smoking status, diabetes, body mass index, and 24-hour calorie intake. Weighted linear and logistic regression models were used to analyze the associations between PA and alcohol use.

Results: HIV- participants had a mean age of 47.3 years and 48% were males. PLWH participants had a mean age of 44.6 and 86% males. The percent that met PA guidelines was higher among PLWH (about 67%) than the HIV- group (about 63%). A significant trend was found across both populations, the percent adhering to guidelines has been slightly increasing among those who are HIV- (2013-2014: 57%, 2015-2016: 60%, 2017-2018: 63%) and decreasing for PLWH (76%, 72%, 53% for those years, respectively). Among the HIV- population, those who engaged in vigorous activities had twice the odds of being a binge drinker than those who do not (OR= 1.905; 95% CI: 1.31-2.77). When stratified by age, those over the age of 50 were significantly less likely to engage in binge drinking and meet PA guidelines than those under 50 ($p < 0.0001$ for both). PLWH who engaged in vigorous activities also had 7.4 odds of being a binge drinker than those who do not (OR= 7.404; 95% CI: 3.18-17.26).

Conclusions: We found that vigorous exercise was associated with binge drinking when evaluating the association overall. The stratified age results suggest that intervening to increase PA may be of benefit among the older adults. However, we continue to explore the data to provide additional insight for PLWH.