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Gender & Physical Activity and Their Relationship to Binge Drinking & Overall Frequency of Alcohol Consumption Among Adolescents

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ABSTRACT
The purpose of this study is to explore how gender and physical activity (PA) are related to alcohol use (AU) among adolescents. A better understanding of factors that influence AU among adolescents will facilitate the development of preventive interventions in this population.

The sample was pulled from the 2011 Youth Risk Behavior Surveillance System (YRBSS), which used a systematic equal probability sampling of 9-12 graders. It was hypothesized that males would have higher rates of AU than would females. PA was also hypothesized to show stronger associations with AU among males than among females.

Consistent with our hypothesis, males were found to consume more alcohol versus females. Though a select-few research studies have found an association between higher levels of PA and high levels of alcohol use, the large association we found was unexpected. Additionally, we predicted appropriately that PA would have a greater influence on AU among males.

While prior research has determined the importance of PA in advancing health-related outcomes, relatively few studies have examined the relationship between PA and specific problem health behaviors among adolescents. Therefore, identifying the factors that influence the relationship between PA and AU is important.

INTRODUCTION
AU among adolescents has become a major public health concern over the past few decades. When asked about AU over the past month, approximately three quarters of the adolescent population report having consumed at least one alcoholic beverage and about one quarter report drinking 5 drinks or more in a row (Bigelow et al., 2014). AU in adolescence is often predictive of future alcohol abuse and can eventually lead to the development of chronic diseases (Bigelow et al., 2014).

Despite research into adolescent PA and AU separately, there is little research on how the two are related and what research exists is often contradictory (Bigelow et al., 2014; Davies & Fowkall, 2011; Dinger et al., 2014). There is also very little research into whether and how gender affects the relationship between PA and AU.

The purpose of this study is to explore how gender and physical activity (PA) are related to alcohol use (AU) among adolescents. A better understanding of factors that influence AU among adolescents will facilitate the development of preventive interventions in this population.

METHODS
When analyzing the 2011 YRBSS data, we restricted the sample to high school students aged 14 to 18. We set gender and level of PA as our independent variables.

Our dependent variables were days of alcohol consumption and days of binge drinking. The sample included 13543 participants (51% females), which had a mean age of 16. In terms of race/ethnicity, 17% of the participants were African American, 42% were white, 14% were Hispanic/Latino, and 27% were other.

PA was assessed with a single item that asked how many days in the past week the participant had exercised vigorously for 60 minutes. Responses were dichotomized (1 = 7 days; 2 = 0 – 6 days). AU over the past 30 days was assessed with two items. One item asked how many days participants had consumed at least one alcoholic beverage (i.e., days of alcohol consumption) and the other asked how many days they had drank 5 or more alcohol beverages in a row over a 2 hour period (i.e., days of binge drinking).

RESULTS
Responses showed that about 27% of the sample reported being physically active on 7 out of the last 7 days. In addition, about 39% of the sample had consumed an alcohol beverage on at least one day, and about 23% had at least one episode of binge drinking, during the month preceding the survey.

Analysis of variance (ANOVA) was used to examine the association of PA on AU and if the association varied by gender. The results are displayed in TABLE 1. Males reported more days of alcohol consumption and binge drinking than did females.

Adolescents who engaged in PA on 7 days per week reported more days of alcohol consumption and binge drinking than did their counterparts. Moreover, the significant gender X PA interactions revealed that PA had a stronger association with AU among males than among females. The nature of this interaction on binge drinking is depicted in FIGURE 1 and is similar to the one for days of alcohol consumption.

SUMMARY OF FINDINGS
As predicted, the results of our study indicate that males both consumed and binge drank alcohol more frequently than did females.

It was also found that individuals that reported PA on the previous seven days were more likely to consume alcohol and binge drink than those who were not as physically active.

In regards to gender differences, we found that being PA had a greater effect on alcohol consumption and binge drinking in males than in females.

REFERENCES