

Alcohol use and physical activity among high school students in Georgia public schools

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Introduction

Several studies have reported positive relationship between physical activity and alcohol use which is incongruous to the idea of clustering of healthy behaviors (1). Physical activity is therefore discussed as both a protective as well as risk factor for alcohol consumption.

Objective

This study examines the association between alcohol use and physical activity among high school students of Georgia public schools.

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Data were obtained from 2018 Georgia Student Health Survey 2.0, an annual survey of all public school students administered by the Georgia Department of Education. In this study, high school (grade 9-12) students' self-reported measure of alcohol use and physical activity is used (N=364,143).

First, alcohol use was divided into four categories based on frequency of drinking per month viz. non-users (0 day), occasional users (1-6 days), frequent users (6-27 days), and daily users (>=27 days). Alcohol use category was then regressed on physical activity using multinomial logistic regression controlling for gender, grade, knowledge about drug and alcohol, and interaction with grade.

Data analyses were performed in R Version 1.1.447.

Key points

It is much less likely that you're daily alcohol user if you're physically active at least one day of the week compared to none

Positive association between alcohol use and physical activity is observed for occasional and frequent users at low levels of physical activity.

Results

Table 1: Alcohol use distribution by predictor variables

Variables	Alcohol use category				p
	Non-users (N=316,582)	Occasional users (N=31,751)	Frequent users (N=10,534)	Daily users (N=5,276)	
Female	52.1	56.4	43.3	28.1	<0.001
Male	47.9	43.6	56.7	71.9	
Grade 9	30.3	21.3	17.4	21.9	<0.001
Grade 10	26.5	24.3	22.5	23.2	
Grade 11	23.3	27.1	27.4	24.1	
Grade 12	19.9	27.3	32.7	30.7	
Taught about alcohol within last year at school (N)	26.3	37.5	44.1	57.5	<0.001
Taught about alcohol within last year at school (Y)	73.7	62.5	55.9	42.5	
Physical activity - None	16.9	15.3	17.3	41.0	<0.001
1 day/week	9.9	12.7	14.0	7.7	
2-3 days/week	28.7	30.2	27.6	12.6	
4-5 days/week	44.5	41.8	41.1	38.7	

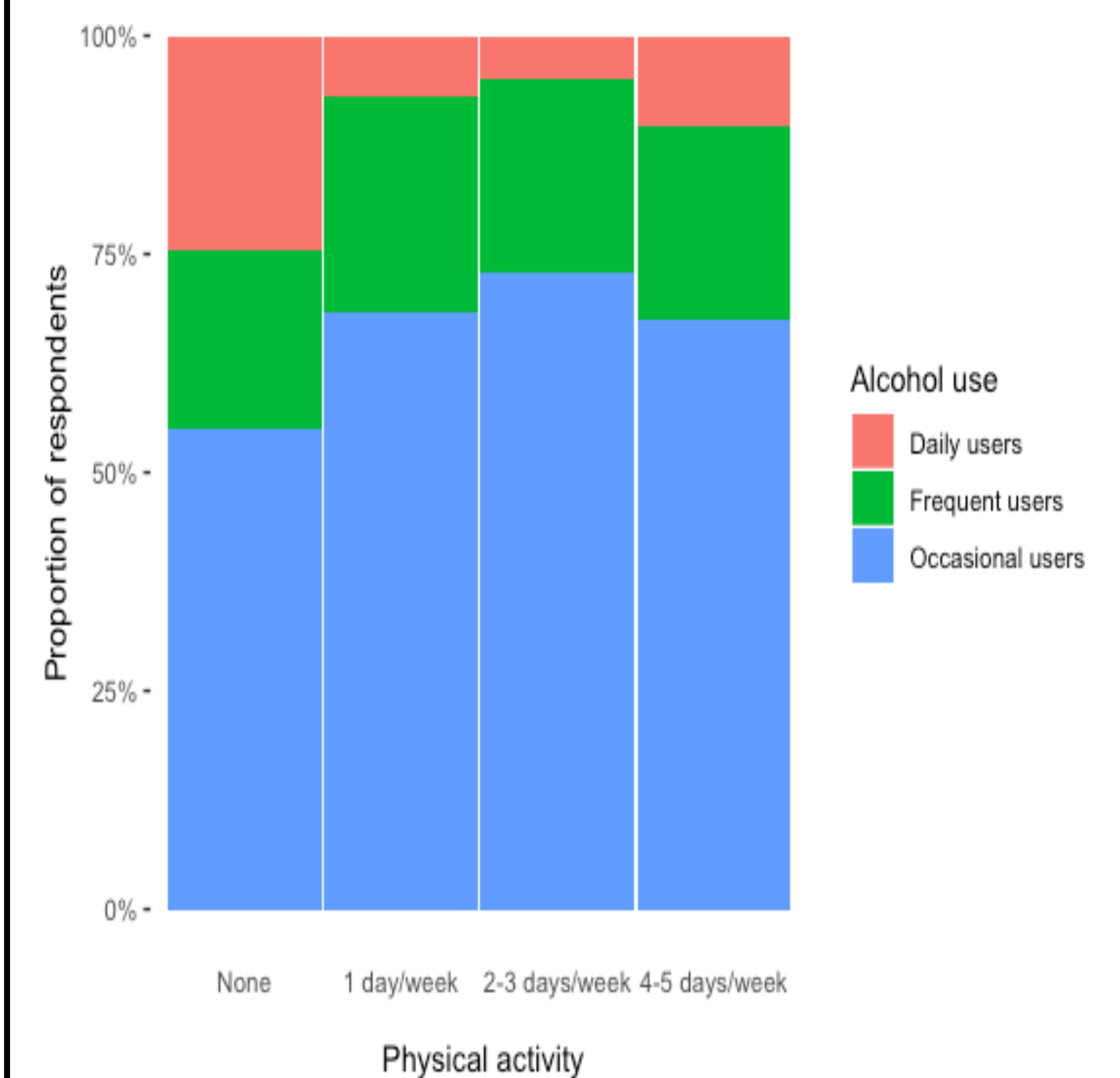
Results presented as percentages (%) across columns.

Table 2: Multinomial logistic regression showing the association between alcohol use and physical activity

Physical activity (None vs)	Alcohol use (Non-users vs.)	β	OR	p
1 day/week	Occasional users	0.26	1.30	<0.001
	Frequent users	0.25	1.28	<0.01
	Daily users	-1.31	0.27	<0.001
2-3 days/week	Occasional users	0.10	1.11	<0.01
	Frequent users	-0.35	0.71	<0.001
	Daily users	-1.88	0.15	<0.001
4-5 days/week	Occasional users	0.04	1.04	0.32
	Frequent users	-0.55	0.58	<0.001
	Daily users	-1.35	0.26	<0.001

Note: Variables entered into the model include gender, grade, whether respondents were taught about alcohol within last year at school, and physical activity interaction term with grade.

Figure 1: Stacked bar-chart showing alcohol users across different physical activity levels



Conclusions and Implications

The results challenge previous reports suggesting a positive association between physical activity and alcohol consumption. The relationship may vary depending on the measure or subgroup of alcohol use or physical activity. As physical activity is increasingly being used as an intervention for prevention and treatment of substance use disorder including alcohol use disorder (2), understanding the relationship between alcohol use and physical activity helps us to better design health promotion programs.

References

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