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Introduction to Data Analysis
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Drinking and Skipping in the Freshman Year

Abstract

This paper reports the results of a study of college students showing that drinking alcoholic beverages during the school week is a cause of skipping classes, especially among freshmen who haven't learned to manage their drinking.

Introduction

It doesn't take a Ph.D. in Pharmacology to know that drinking impacts work performance negatively. In spite of this common sense knowledge, college students often profess belief in their ability to drink without paying the price: hangovers, sleepiness, lethargy, and poor work. This study was undertaken to dispel youthful denial by providing students with unequivocal evidence of the impact drinking has on school performance.

There are various parameters of work performance, varying in sensitivity to alcohol interference. Absenteeism has long been used in studies of alcoholism as a measure of the impact of drinking on workers. Therefore, in this study we use a similar measure—skipping classes. We expect that students who drink more often during the school week will also skip classes more frequently.

What about the impact of experience? Students often cut loose when they first come to college, feeling free for the first time—free to stay up as late as they want, to come and go as they want, and of course, to drink as much and as often as they want. It takes time to develop self-control, to learn how to mix drinking with personal responsibilities. Therefore, we expect that freshmen should have

especially acute difficulties combining work and drinking. When they drink during the school week, they drink too much, or stay up too late while drinking, and wind up feeling too tired and hung over to attend class the next day. They are learning to handle their vices all by themselves. The first year at college is a test of their ability to mature quickly enough to avoid crashing and burning in their schoolwork.

The first year at college either teaches students to manage their drinking or they're less likely to remain in college. Those that continue in college may still drink during the school week, but they will be more familiar with the consequences. They will, perhaps, have avoided signing up for early classes if they know they will be drinking in the evening. Or they will know not to have that third, or fourth, or whatever numbered drink. And some will have learned NOT to drink during the school week. On the whole, the relationship between number of classes skipped per week and the number of times students drink during the school week should be stronger among freshmen compared to sophomores, juniors, and seniors. It is tempting to hypothesize a linear increase across all levels, but the acute learning experience of the freshmen year should reduce the linearity of the association. It's possible, even, that by the senior year, drinking problems grow again as students become weary of school, a condition known as "senioritis."

Methods

Sample--A questionnaire was administered to students at a small, liberal arts college in the mid-Atlantic region of the United States in the Spring of 1996 and 1997. Attempts were made to recruit a wide variety of respondents, but the sampling methodology was not random. Hence there is no way of estimating whether the researchers succeeded in obtaining a representative sample. The total number of respondents of the sample is 876, with both years combined.

Measurement--The questionnaire was developed by students in a methodology course. It was administered to students at the same college. The questionnaire contained more than 40 items on a wide variety of topics including demographics, personal beliefs, grades, habits, and so on. The questions used in this study to measure the three study variables were:

SKIP (dependent variable)
How many classes do you skip during a typical school-week?

WKDRINK (independent variable)
How many times per week do you usually have at least one drink during the indicated part of the school week (Sunday-Thursday afternoon)?

LEVEL (control variable)
What is your class? freshmen, sophomore, junior, or senior

Hypothesis

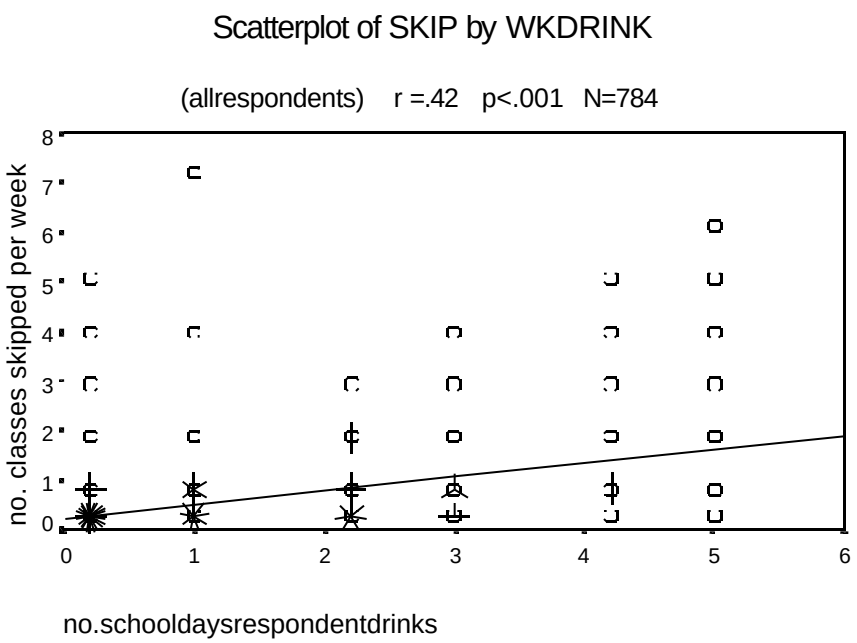
If the theoretical model is correct, SKIP and WKDRINK should be positively correlated. When controlling for LEVEL, the correlation should be higher among freshmen, and lower among sophomores, juniors, and seniors.

Results

Figure 1 on the following page presents a scatterplot of SKIP by WKDRINK for all respondents. The relative number of coincident responses at a specific data point is indicated by the number of "petals" in each "sunflower," as SPSS calls them. In this scatterplot, each petal represents 10 respondents.

The data support the hypothesis that the variables are positively correlated ($r = .42$, $p < .001$) The relationship is highly significant, statistically speaking. The correlation is moderate, explaining 18% of the variation in SKIP ($r^2 = .18$). Note that the upward slope of the regression line on the scatterplot appears to be determined primarily by the fact that most frequent drinkers are frequent skippers, and most infrequent drinkers are infrequent skippers. There is one respondent who drinks every day, and skips no classes, and a few students who don't drink but who nevertheless skip several classes each week.

Figure 1



Figures 2-5 on the following pages present scatter plots of SKIP by WKDRINK for freshmen, sophomores, juniors, and seniors, in that order. The data support the contention that drinking is especially conducive to skipping class among freshmen.

Discussion

Evidently, freshmen learn to manage their drinking a little better, and/or some of them are dismissed from college for academic failure. The correlation between SKIP and WKDRINK among freshmen(r = .64) is larger than the coefficients for other class levels (r = .37, .37, and .44). The coefficient of determination is respectably large for the freshmen group (r^2 = .42). There is sufficient support for educational efforts aimed particularly at freshmen to help them become aware of the slippery slope they enter when they start drinking during the week.

Figure 2

Scatterplot of SKIP by WKDRINK

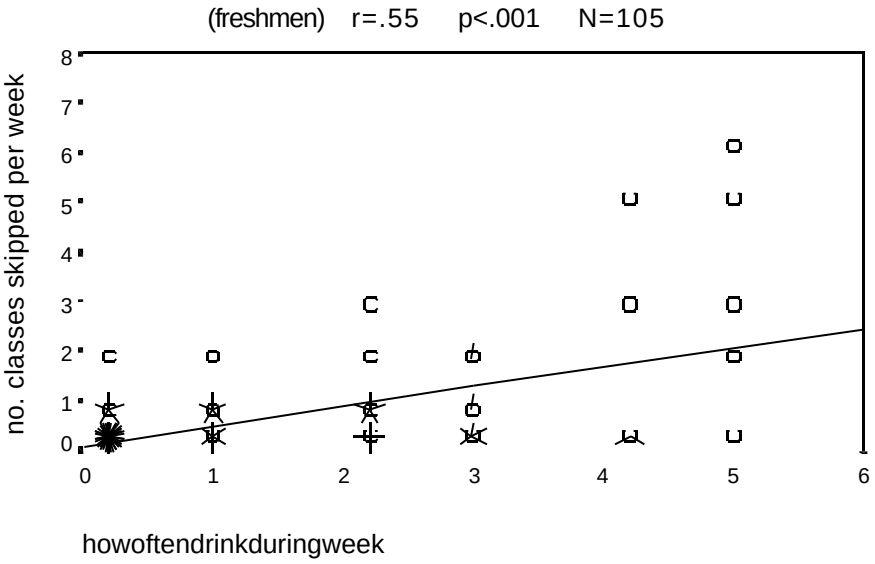


Figure 3

Scatterplot of SKIP by WKDRINK

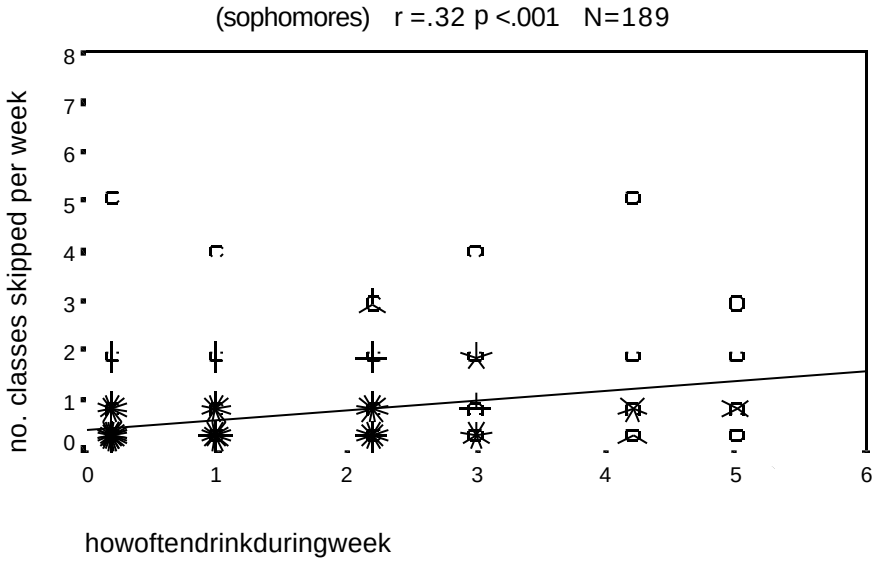


Figure 4

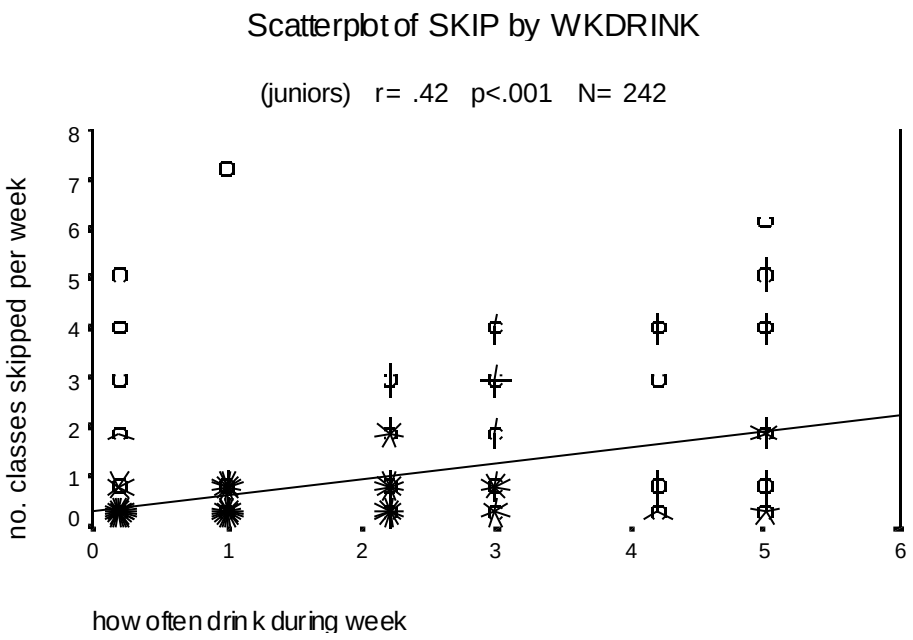
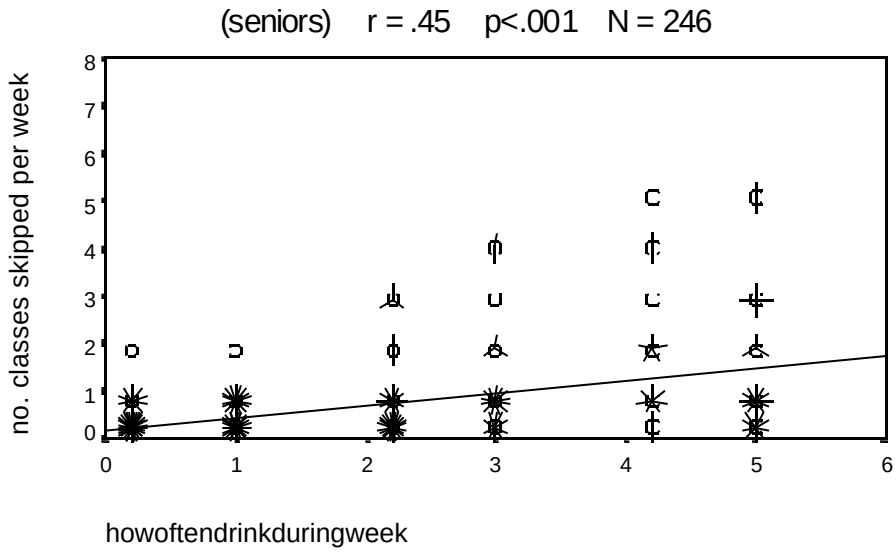


Figure 5



There is less evidence, in general, to support a mission against drinking among sophomores, juniors, and seniors. With only 18% of SKIP determined by WKDRINK, it will be hard to convince young people that the risk is worth the average individual's concern. Young people are risk-takers. They don't listen to cautionary tales unless the problem becomes clearly disastrous among their peers. This is not to say that most students drink much during the week. The data do not support that image of their habits.

If the slight rise in correlation for seniors is meaningful, perhaps it is related to the condition "senioritis" mentioned in the introduction. However, the rise is too trivial to make much of, less than one tenth of the range of a correlation coefficient. It may not even be a statistically significant difference.

How might this study be improved? Perhaps by delving more deeply into the work, sleep, and leisure habits of students, showing how drinking actually works to reduce going to class would improve the study. It may work partially through inducing sleep deprivation, excess sleep as recovery from alcohol poisoning (commonly known as a hangover), depression (the body's rebound from alcohol's stimulating effects), and some interesting social effects. The latter would be most interesting for sociologists.

Consider the possibility that drinking during the week affects the socializing patterns of drinkers, causing them to coalesce into a group, a sub-subculture, even. The literature on drug use is full of interesting effects of substance use on social patterns. To the extent that regular drinking is viewed as deviant, or stigmatizing, it may drive regular drinkers into each other's company for solace, fellowship, and freedom from judgment. This may reinforce the physical problems caused by frequent drinking, enhancing the causal effect of drinking on skipping classes. It becomes all the easier to skip a class when a companion is of similar mind.

Acknowledgments

Thanks to all the students in my class who's attention to detail and desire to be helpful made this paper a better example for them. My students make me look good.