



Gender and Audit Score Significantly Interact to Effect Fluid Poured in a Simulated Alcohol Free Pour Task

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Introduction

College students' alcohol consumption is excessive creating a potential public health concern (Van Skike et al., in press). Research has shown that college students will over pour a standard drink when participating in a simulated alcohol free pour task, creating the Overpour Effect (Zandy et al., 2013). This suggests that students self report alcohol use data may be incorrect. Interesting, and contrary to the Overpour Effect, previous research has also shown that subjects will pour less fluid in a simulated alcohol pouring task if they are asked to pour in the presence of an unfamiliar peer (Zandy et al., 2013). However, it is unknown what social factors in the interaction between the subject and the unfamiliar peer influence pouring behavior. This study investigates how gender of the subject and unfamiliar peer and previous alcohol use history interact to affect fluid poured in a simulated alcohol free pour task.

Method

Participants:

105 UW-Eau Claire students (n=29 males, n=76 females) recruited through the Sona-system. Subjects received class extra credit for participation.

Design & Procedure:

Participants completed three different aspects to the study: a survey, an alcohol timeline calendar, and an alcohol free pouring task. The survey consisted of basic demographic information, an impulsivity scale (The Barlett Impulsivity Test), and the 10 question Alcohol Use Disorders Identification Test (AUDIT). Participants' alcohol timeline calendar requested participants to reflect on the number of alcoholic drinks they consumed during the previous two weeks. Following completion of these surveys, participants free pour task consisted of water dyed yellow to resemble beer contained in standard beer pictures into three different size clear glass mugs (16oz, 22oz, and 34oz). To complete the task students were asked to pour one standard beer into both the mug for themselves and another for the experimenter. The order of the mug size was counterbalanced across days to prevent carry over effects. The amount students poured was not measured until subjects left the room. Participants were given debrief forms following the experiment with no further alcohol education given.

References

Van Skike, C.L, Zandy, S.A. & Matthews, D.B. (in press). Substance use in Adolescence. In *Puberty: Physiology and Abnormalities*, Eds, Philip Kumonov and Askok Agarwal.

Zandy, S.L., Pang, J.S., Ho, M.H. & Matthews, D.B. (2013). Singaporean college students overpour drinks similar to Western populations: Influence of peer presence in a simulated alcohol-pouring task. *Alcoholism: Clinical and Experimental Research*, 37, 1963-1970

Table 1

	AUDIT	Barlett	Days Drink	Days Binge
AUDIT	1			
Barlett	0.233*	1		
Days Drink	0.739**	0.189	1	
Days Binge	0.742**	0.169	0.774**	1

TABLE 1: Correlation matrix demonstrating a significant relationship between AUDIT score and impulsivity and alcohol consumption in terms of both days drinking and binge drinking episodes. * $p < 0.05$, ** $p < 0.01$.

Figure 1

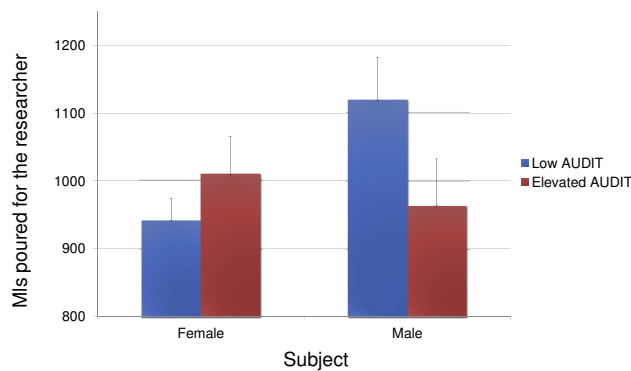


Figure 1: Interaction of the subjects' gender and AUDIT score on the amount of fluid poured for the researcher. As reported in methods, subject gender and AUDIT significantly interact to impact fluid poured for the researcher. Error bars denote SEM.

Figure 2

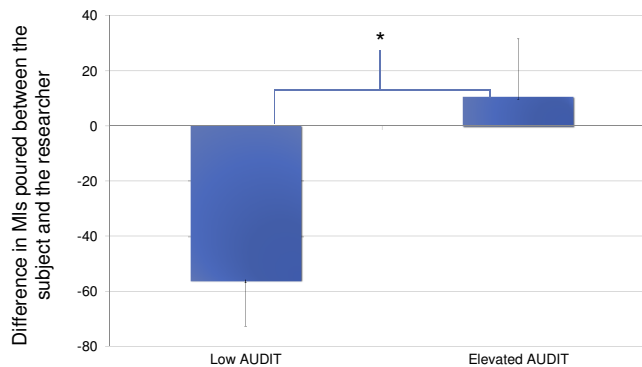


Figure 2: Differential amount of fluid the subject poured for the researcher and themselves based on their AUDIT score. A negative scores indicates the subject poured more for the researcher while a positive score indicates the subject poured more for themselves. Error bars denote SEM. * $p < 0.05$

Results

Data was collected on a total of 105 subjects (n=76 for female and n=29 for male) with an average age of 19.5 years (SD=1.7 years). We first investigated the relationship between impulsivity, AUDIT score, days drinking in the last two weeks and the number of binge episodes in the last two weeks (binge drinking is defined as 4+ drinks for females and 5+ drinks for males). As expected, AUDIT score significantly positively correlated with impulsivity as measured by the Barlett Impulsivity Score, the number of days drinking in the last two weeks and the number of binge drinking episodes in the last two weeks, See Table 1. To better understand how previous alcohol experience impacted fluid poured in the task, we used the AUDIT score as a proxy of alcohol experience by dividing subjects into a low AUDIT score (AUDIT of 7 or less) and an elevated AUDIT score (AUDIT of 8 or greater). Interestingly, the gender of the subject significantly interacted with the AUDIT score in relation to the fluid poured for the unknown researcher (i.e. the unknown peer) in the simulated alcohol pouring task (Two Way ANOVA, $F = 3.98$, $df(1,97)$, $p < 0.05$). Specifically, female subjects with low AUDIT scores pour less for the researcher than females with higher AUDIT scores while males with low AUDIT scores pour more for the researcher than males with higher AUDIT scores, See Figure 1. Finally, AUDIT category (lower vs elevated) predicted the difference subjects poured for themselves and the researcher, See Figure 2.

Discussion

Previous research has shown that college students often participate in what is known as the Over Pouring Effect, or pouring more fluid than a standard alcoholic drink when participating in a simulated alcohol pouring task. However, previous research also demonstrates that students pour less fluid in the presence of an unfamiliar peer suggesting other factors, such as gender or alcohol use history may influence pouring behavior. The current work demonstrates that subject gender along with their previous alcohol use history as determined by AUDIT score significantly interact to alter pouring behavior. Though the reasons for this interaction are unclear, the dynamics of the subject-experimenter dyad may trigger social norms to influence how much students pour. For example, students without significant drinking history may feel uncertain about the peer's approval of drinking and consequently pour less fluid. Future research will investigate how pouring behavior is altered by potential environmental settings such as participation in off campus drinking events.