

# Rescuing the Overpouring Effect: The impact of Perceived Drinking Situation in a Simulated Alcohol Free Pour Task

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## Introduction

College students' alcohol consumption is excessive creating a potential public health concern. 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 (White et al., 2001; Zandy et al., 2013). Interesting, and contrary to the Overpour Effect, we reported initial data showing 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 how reliable the reduced pouring effect is when an unfamiliar peer is engaged. In addition, it is unknown if the reduced pouring can be reinstated, i.e., rescued. This study investigates factors that can reduce the Overpour effect and if the Overpour effect can be rescued.

## Method

### Participants:

217 UW-Eau Claire students recruited through the Sona-system participated in the two studies (n = 105 for study 1 and n = 112 for study 2). Subjects received class extra credit for participation. See Table 1 for basic demographic data.

### 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. In study 1, 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. In study 2, the same procedure was followed except subjects were instructed to pour the amount of beer they would have at an off campus party.

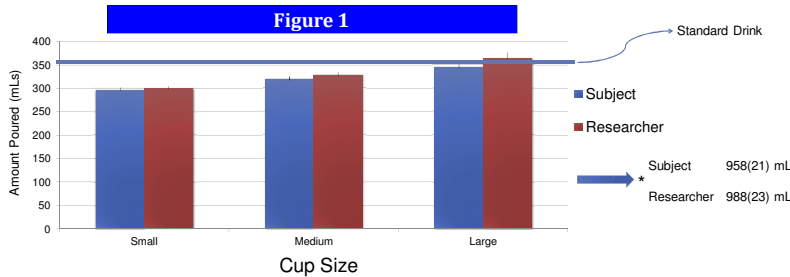
**Table 1** (study 2 data are bold)

Average Age	Ethnicity	Religion
19.7 (0.17) <b>19.5 (1.1)</b>	92 White <b>98 White</b>	37 Catholic <b>43 Catholic</b>
	12 Non-White	42 Christian
	<b>14 Non-White</b>	<b>42 Christian</b>
	26 Other	27 Other

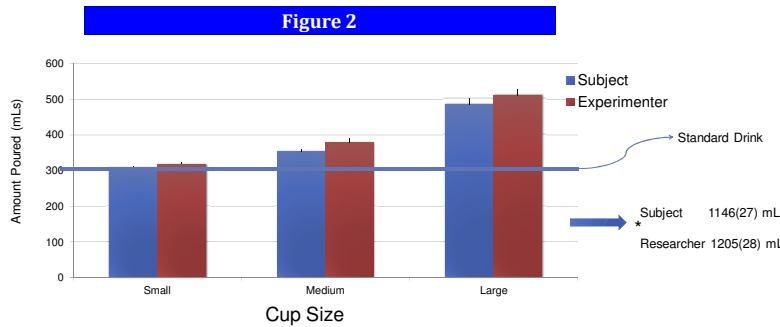
**Table 2**

	AUDIT	Barlett	Days Drink	Days Binge
AUDIT	1			
Barlett	<b>0.159*</b>	1		
Days Drink	<b>0.679**</b>	0.118	1	
Days Binge	<b>0.705**</b>	0.11	<b>0.69**</b>	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. \*  $p < 0.05$ , \*\*  $p < 0.01$ .



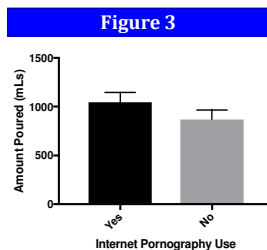
**Figure 1:** Amount of fluid poured in the free pouring task by the subject for themselves and the experimenter. Both the size of the cup and who the subject was pouring for significantly altered the amount poured. The standard drink line is the amount of fluid in a 12 oz beer. Error bars denote SEM and \*  $p < 0.05$ .



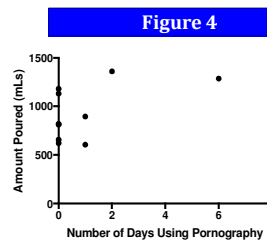
**Figure 2:** Amount of fluid poured in the free pouring task by the subject for themselves and the experimenter. Both the size of the cup and who the subject was pouring for significantly altered the amount poured. The standard drink line is the amount of fluid in a 12 oz beer. Error bars denote SEM and \*  $p < 0.05$ .

### Does Internet Pornography Use Impact the Amount of Fluid Poured

To investigate this we divided subjects into those that have or have not used internet pornography within the last two weeks and then asked them to pour a standard drink.



**Figure 3:** Those who use internet pornography tend to pour more fluid in a simulated alcohol pouring task.



**Figure 4:** Correlation between the number of days using internet pornography in the last two weeks and the amount of fluid poured for females.  $R^2 = +0.56$

## Results

Table 2 shows the relationship between impulsivity, AUDIT score, days drinking in the last two weeks and the number of binge episodes in the last two weeks for both Study 1 and Study 2 combined. 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. We next investigated how pouring for an unfamiliar peer impacted pouring behavior. We found that when subjects poured for themselves and an unfamiliar peer, the amount poured was LESS than a standard drink and subjects poured significantly less for themselves than the researcher (main effect of subject,  $p < 0.05$ ); cup size impacted amount poured (main effect of cup size,  $p < 0.05$ ). See Figure 1. However, if subjects were cognitively transported to a more familiar drinking environment, that is an off campus party, the Overpour effect was rescued. Specifically, subjects over poured fluid for themselves and the experimenter, the amount poured is still less for themselves than for the researcher (main effect of subject,  $p < 0.001$ ) and cup size impacted the amount poured (main effect of cup size,  $p < 0.001$ ). See Figure 2.

## Discussion

Previous research has shown that college students often participate in what is known as the Overpour Effect. However, previous research also demonstrates that students pour less fluid in the presence of an unfamiliar peer. We first replicated this effect and then demonstrated we could rescue the Overpour Effect with a simple cognitive manipulation. Asking subjects to imagine they are at an off campus party led to a large Overpour Effect highlighting the potential dangers of student alcohol use. In addition, the current work calls into question the validity of two week follow back surveys. Specifically, undergraduates may respond with a "laboratory" answer instead of a "college party" answer, a situation where they frequently consume alcohol. Finally, very preliminary data suggest, at least for females, that internet pornography use and the amount of fluid poured may be related. It is tantalizing to speculate that internet pornography and alcohol use are impacted by a similar underlying factor. Future research is needed to identify such factors.