



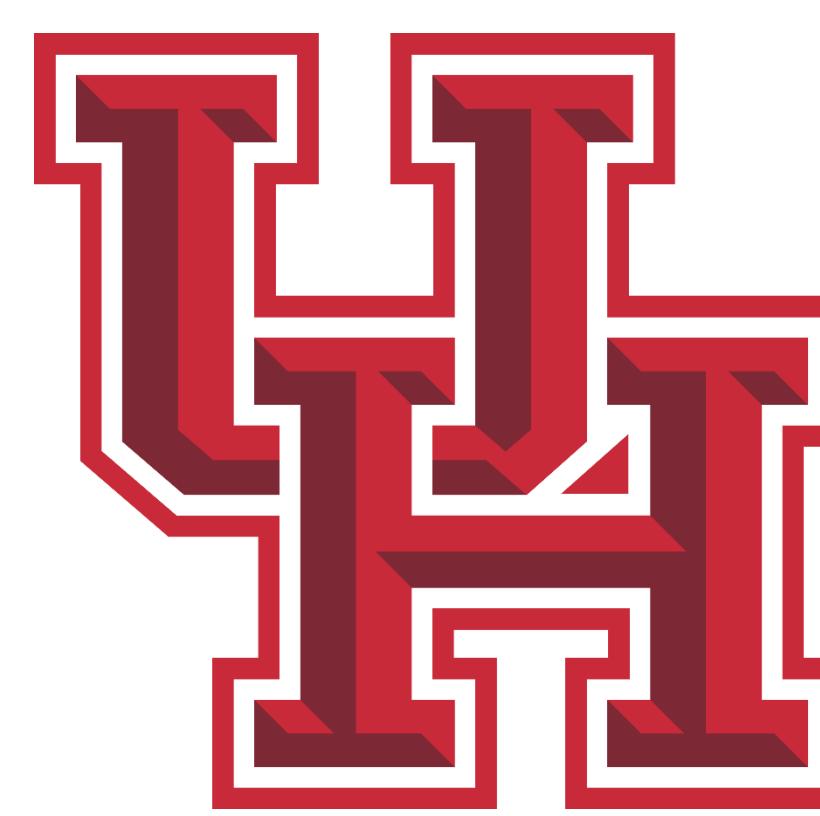
# Examining Sex and Cross-Cultural Differences on a Comprehensive Assessment of Protective Behavioral Strategies for Alcohol

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## INTRODUCTION

- Hazardous drinking among emerging adults is a significant public health problem (NIAAA, 2019)
- Protective behavioral strategies (PBS) are strategies that individuals use prior to, during, or after drinking with the intent to mitigate consequences of alcohol use (Martens, et al., 2007)
- Evaluations of PBS have been primarily conducted in the United States which has limited generalizability and sample diversity
- Purpose**
- The purpose of the present study was to examine the use of PBS in a cross-cultural context to evaluate:
  - Differences in PBS use across countries and/or sex/gender
  - The extent to which the protective effects of specific PBS differs across countries and/or sex/gender

## METHOD

### Participants and Procedures

- College students recruited from four sites: Argentina (n=439), Spain (n=298), and the United States (two sites; n=775) to complete an online survey

### Measures

- Past month **PBS use** was assessed with 40 items including 15 items from the original Protective Behavioral Strategies Survey (PBSS; Martens et al., 2005), 6 items from the 20-item PBSS (Treloar et al., 2015), 14 items from the Protective Behavioral Strategies Measure (PBM; Novik & Boekeloo, 2011), and 5 items from the Behavior Self-Control Strategies scale (BSCS; Werch, 1990) measured on a 6-point response scale (1=Never, 6=Always)
- PBSS-20 subscales included Stopping/Limiting Drinking, Manner of Drinking, and Serious Harm Reduction
- Negative alcohol-related consequences** were assessed using the English and Spanish versions of the 48-item Young Adult Consequences Questionnaire (YAACQ; Read et al., 2006; S-YAACQ; Pilatti et al., 2016) measured on a binary response scale that reflects presence or absence of alcohol-related problems in the last month (0=No, 1=Yes)
- Alcohol consumption** was assessed with the Daily Drinking Questionnaire (DDQ; Collins et al., 1985)
- Standard drink units (SDU) were converted to grams of alcohol (1 SDU=14g in US & Argentina. 1 SDU=10g in Spain)
- Alcohol consumption was broken down into indicators that were assessed across all sites, including two frequency measures (i.e., past 30-day frequency of alcohol use, past 30-day frequency of getting drunk), an indicator of quantity (i.e., number of SDUs consumed during a typical week), and an indicator of binge drinking frequency (past 30-day frequency of drinking 4+/5+ SDUs in U.S. and Argentina and 5.5+/7+ in Spain for women/men in a period of two hours or less)

**Table 1. Country comparisons in Use of Specific Alcohol Protective Behavioral Strategies (PBS)**

	USA (U)		Argentina (A)		Spain (S)		Country Differences
	M	SD	M	SD	M	SD	
Stopping/Limiting Drinking	3.32	1.23	2.89	0.97	2.83	0.094	32.93 .000 U>S=A
Manner of Drinking	3.51	1.36	3.65	1.39	3.63	1.28	1.85 .157 U=S=A
Serious Harm Reduction	5.09	0.98	4.57	0.99	4.92	0.98	50.52 .000 U=S>A

**Table 2. Sex Comparisons in Use of Specific Alcohol PBS**

	Female		Male		Sex		Differences
	M	SD	M	SD	t	p	
Stopping/Limiting Drinking	3.16	1.18	2.99	1.04	2.96	.003	F > M
Manner of Drinking	3.66	1.35	3.42	1.34	3.24	.001	F > M
Serious Harm Reduction	5.1	0.89	4.58	1.06	9.67	.000	F > M

## RESULTS

- We conducted a series of ANOVAs with Tukey post-hoc comparisons to examine differences in PBS use across countries (see Table 1)
- We found US college students reported significantly higher use of Stopping/Limiting Drinking PBS than students in Argentina or Spain, which did not differ from each other
- Argentine college students reported significantly lower use of Serious Harm Reduction PBS than students in US or Spain
- No significant differences across countries were found on use of Manner of Drinking PBS
- We conducted series of independent-samples *t*-tests to examine differences in PBS use across males and females (see Table 2)
- On each subscale and on 32 of 40 individual items, females reported higher PBS use than males
- We used elastic net regression to identify individual PBS items that most strongly predicted consequences in the full sample (see Table 3) and in each country (results not shown)
- In the full sample, we found 12 of the 40 items significantly predicted negative consequences, with two items predicting higher consequences ("Punish myself for not limiting" from BSCS; "Have a friend let you know when you've had enough" from PBSS)
- Although there were some differences in terms of specific items that were significant within each country, there was a high level of consistency and we could not discern a pattern to the observed differences

**Table 3. Results from Elastic Net Regression**

Full Sample (alpha = .2)	b
Have a friend let you know when you've had enough	.121
Drink slowly, rather than gulp or chug	-.218
Refuse to ride in a car with someone who has been drinking	-.029
Only go out with people you know and trust	-.310
Eat before or during drinking	-.079
Keep track of how many drinks you were having	-.205
Pace your drinks to 1 or fewer per hour	-.358
Limit money spent on alcohol	-.104
Only drink in safe environments	-.739
Never leave your drink unattended	-.174
Choose not to drink alcohol	-.470
Punish myself for not limiting	.317

## SUMMARY

- Supporting and expanding on previous research, we found that females reported higher PBS use than males in an international sample
- Although we found some differences in frequency of PBS use across countries, we found similar protective effects of most PBS across countries
- At the item-level, a majority of PBS predicted decreased consequences and we identified two items that consistently predicted increased consequences suggesting that self-punishment and relying on others to regulate your drinking may not reduce harm (or at least are indicative of a more at-risk drinker)
- Limitations include the use of convenience samples (limiting generalizability), inability to distinguish between sex and gender, and relatively small subsample sizes (preventing examination of sex-by-country subsample differences)

