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STUDY ABROAD STUDENTS' DRINKING BEHAVIOUR

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Italian credit mobility students significantly increase their alcohol intake, risky drinking and related consequences during the study abroad experience

Giovanni Aresi, Ph.D.¹, Simon Moore, Ph.D.² and Elena Marta, Ph.D.³

¹ Psychology Department. Università Cattolica del Sacro Cuore. Largo Gemelli 1, 20123 Milano, Italy (giovanni.aresi@unicatt.it)

² Violence Research Group, School of Dentistry, Cardiff University, Heath Park, Cardiff CF14 4XY, UK (mooresc2@cardiff.ac.uk)

³ Psychology Department. Università Cattolica del Sacro Cuore. Largo Gemelli 1, 20123 Milano, Italy (elena.marta@unicatt.it)

Corresponding author: Giovanni Aresi. Psychology Department. Università Cattolica del Sacro Cuore. Largo Gemelli 1, 20123 Milano, Italy (giovanni.aresi@unicatt.it). Tel. +39-02-7234.3048 Fax. +39-02-7234.2642

RUNNING HEAD: STUDY ABROAD STUDENTS' DRINKING BEHAVIOUR

The present study is part of a research project supported by the European Foundation for Alcohol Research (ERAB; EA 14 11).

Italian credit mobility students significantly increase their alcohol intake, risky drinking and related consequences during the study abroad experience

Abstract

Studying abroad, an area of considerable growth, can expose students to additional health risks which may be exacerbated through unfamiliarity with their host country. We find Italian exchange students consume more alcohol and experience more alcohol-related negative consequences compared to their pre-departure levels. This is the first such study in European students and opportunities for intervention are discussed.

Keywords:

5-10

Credit mobility students

Study abroad

Erasmus program

Risk behaviours

Alcohol

Alcohol-related consequences

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Introduction

The number of European university Credit Mobility Students (CMS; students participating in exchange programmes, such as inter-university exchanges or study abroad programs) increased to over 270,000 a year in 2012/2013 since 1987, when the Erasmus program started ([European Commission, 2014](#)). Although research on other travelling populations (e.g., international tourists) indicates that geographic mobility is associated with an increase in at-risk behaviours (see, for example, [Bellis et al., 2009](#); [Lee et al., 2009](#)), few studies have examined the impact of the study abroad experience on alcohol consumption and related negative consequences. The available research is mostly restricted to small samples of American college students. These studies suggest students consume more alcohol and are more likely to experience negative consequences associated with alcohol misuse while abroad ([Pedersen et al., 2009](#); [Hummer et al., 2010](#); [Pedersen et al., 2010](#); [Pedersen et al., 2011](#); [Pedersen et al., 2014](#)).

This study investigates changes in Italian CMSs' drinking patterns (the total alcohol consumed per week, and their frequency of heavy episodic drinking and drunkenness) and the number of negative events experienced typically associated with alcohol use. Comparisons are made across two time points: pre-departure and during the study abroad experience. We hypothesise that students will increase, compared to pre-departure levels, the amount alcohol that they drink, the frequency that they engage in heavy episodic drinking and, accordingly, experience a greater number of alcohol-related negative consequences during their study abroad trip. Analyses further explore gender differences.

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Method

Participants

Participants were eligible if they did not abstain from alcohol, were studying at the host university (a university in the north of Italy) and were planning to engage in a credit mobility study abroad experience (e.g., the Erasmus program). During the 2015-2016 fall semester all eligible study-abroad students were invited to participate ($N = 412$) through face-to-face contact with the institution organising the study abroad experience. Students who consented subsequently completed a baseline online survey ($N = 169$). One student dropped out of the study abroad programme and was not invited to complete the second survey. Following a further emailed invitation 79.1% ($N = 133$) of those who completed the first survey also completed the second online follow-up survey. Those who abstained from alcohol at pre-departure and while abroad were excluded leading to a final sample of 121 participants.

Design and procedures

Participants received an email containing a link to the baseline survey before departing for their trip abroad (T_1). The baseline survey contained an information sheet detailing what would be required of participants. Four months into the experience abroad all participants were emailed a link to a follow-up survey (T_2). The baseline survey contained demographic questions recording age, gender, nationality, year of study, and country of residence while studying abroad. The Institutional Review Board approved all study procedures.

Participants were prompted to think about a typical week during a 30-day period. At baseline (T_1) this was a typical week during the month prior to departure, at follow-up (T_2) it was a typical week during the fourth month of the study abroad experience. Participants were then asked on which day(s) of a typical week they drank any alcohol, followed by Bloomfield, Hope, and Kraus's (2013) Typical-Drinking-Day Beverage-Specific Quantity

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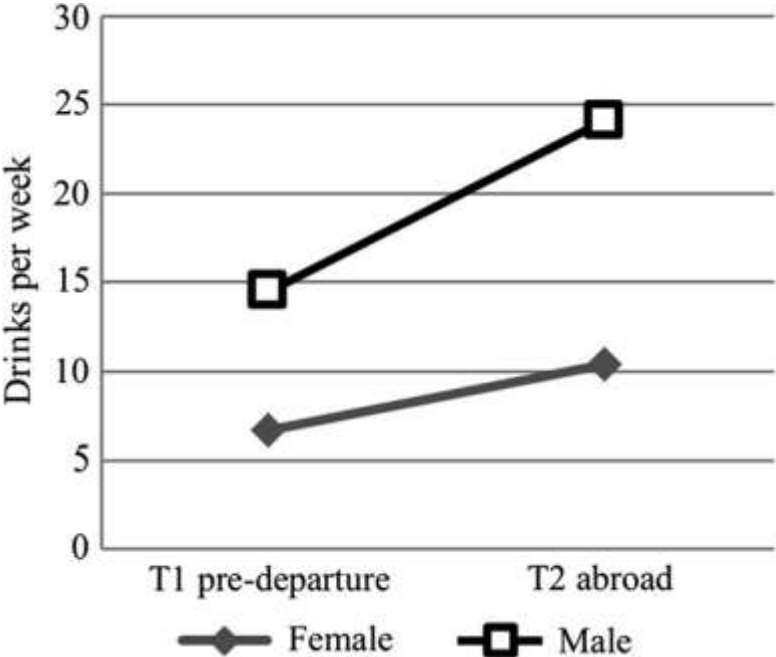
Measure. Standard drink (containing approximately 10g pure ethanol) definitions were presented using Kuntsche and Labhart's (2012) pictograms that show a variety of beverages that correspond to a standard drink. The number of weekly drinking days were multiplied with the number of standard drinks consumed in a typical drinking occasion to estimate the number of standard drinks consumed in a typical week. Respondents were asked about the frequency they engaged in heavy episodic drinking (HED) defined as at least four drinks for women and five drinks for men drunk in one sitting. To assess how often participants got drunk drunkenness was defined as exhibiting a staggering gait, difficulties with speech, vomiting or not remembering what happened during the drinking occasion (measures were adapted from the ESPAD 2015 survey). The Brief Young Adult Alcohol Consequences Questionnaire (BYAACQ) (Kahler et al., 2005; Kahler et al., 2008) was used to assess the negative consequences experienced while drinking alcohol. In this measure participants are asked to indicate which of 24 items in a list they had experienced. Items ranged in severity from having had a hangover to displaying symptoms associated with tolerance.

Analytic plan

A 2×2 mixed analysis of variance (ANOVA) was used to examine the effects of time and gender (Time [T₁-T₂] × Gender [male, female]) on the number of standard alcoholic drinks consumed weekly. Outliers in the data, as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box, were identified. The five outliers, all from female participants, were removed. Wilcoxon signed rank tests were run on monthly HED frequency, monthly frequency of drunkenness and sum of alcohol related negative consequences experienced. Baseline scores were also compared between those who completed the follow-up survey and those who did not to assess biases attributable to attrition.

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Results



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Table 1 shows descriptive statistics of drinking pattern measures by gender of participants and time of assessment. There were no significant differences between follow-up completers and non-completers on any pre-abroad drinking and consequences measure recorded at baseline ($p > .05$ on all tests) suggesting attrition was not attributable to reasons associated with alcohol use. Participants had a mean age of 22 years ($SD=1.47$) and included 83 women (71.6%). The majority of the sample were Italian students (98.3%) and enrolled in a bachelor degree (59.1%). Study abroad destinations included Europe (81%), Northern American countries (10.3%) with the remaining studying in Australia, Argentina, Russia and Japan.

Change in number of drinks per week

A 2×2 (Time [T_1, T_2] \times Gender [male, female]) mixed ANOVA was conducted with alcohol consumption as a dependent variable. There was a significant main effect of time ($F(1,108)=25.135, p < .001, \text{partial } \eta^2 = .189$) with more drinks consumed at T_2 than T_1 . As hypothesized, students increased the number of drinks consumed weekly while abroad (T_2). There was also a main effect for gender ($F(1,108)=24.645, p < .001, \text{partial } \eta^2 = .186$) with overall fewer drinks consumed by female students compared to male ones. There was a statistically significant, but modest, interaction between time and gender ($F(1,108)=4.755, p < .05, \text{partial } \eta^2 = .042$) indicating that there was a greater increase in number of standard drinks consumed while abroad among male compared to female students (see **Error!** Reference source not found.).

Figure 1 - approximately here

Change in the other drinking pattern measures and consequences

Wilcoxon signed-rank tests showed that median monthly HED ($Z=-2.725, p < .01$) and drunkenness ($Z=-4.530, p < .001$) frequency, as well as number of alcohol related negative

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consequences at T₂ ($Z = -2.807, p < .01$) were significantly greater at T₂ compared to the median T₁ levels. Median HED frequency rose from one to two times a month, while monthly median number of episodes of drunkenness went from one (i.e., never been drunk) to two (i.e., been drunk one or more times), and median number of alcohol related negative consequences experienced in a month increased from one to three. Descriptive statistics show that the percentage of participants who engaged in HED increased from 54.1% at T₁ to 66.4% at T₂, drunkenness from 28.3% to 51.3%, and having experienced one or more negative consequence from 63.1% to 73.7%.

Table 1. approximately here

Discussion

Findings showed that European study abroad students increased their alcohol consumption levels and accordingly showed increases in HED, drunkenness and alcohol-related negative consequences. This is consistent with the [Pedersen et al. \(2010\)](#) study of American CMSs. In addition, and in contrast with previous research ([Hummer et al., 2010](#)), this study also found that male *and* female CMSs both drank more heavily while abroad with male students showing the greatest increase. Research on this population of students is important given the growing number of students who are participating in study abroad programmes in Europe.

Heavy alcohol consumption increases the risk of many alcohol-related consequences ([Mallett et al., 2011](#)), an observation replicated in the current study. This is particularly notable for study abroad students, however. While abroad alcohol-related consequences may be exacerbated through unfamiliarity with the host country's health services, legal processes, and students' limited host country language skills. For female students in particular, who we also found drank more and experienced more negative consequences, heavy drinking can expose them to a greater risk of sexual assault ([Flack et al., 2014](#)). Given the relative higher

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proportion of female students among European CMSs ([European Commission, 2014](#)), this is an issue that warrants further attention.

Limitations of the present study include the use of a convenience sample that may not be representative of the European study abroad student population. This may have had an impact on results regarding drinking quantity, but less likely on related-consequences ([Pedersen et al., 2014](#)).

Conclusions

In accordance with theories on young people's geographic mobility and research on American study abroad students, findings suggest that studying abroad may represent a specific period when students are prone to misuse alcohol. Little is known on factors that are related to increases in drinking among this student population, and further research is needed to get a better understanding of students' experiences abroad and how it relates to at-risk behaviours. Furthermore, no study has yet addressed drug use in CMSs and little is known on unprotected sexual behaviour. Different entities (e.g., health professionals, counselling services, student associations) operating in the international higher education field may play a role in reducing risky drinking and related consequences among both incoming and outgoing study abroad students. For example, host institutions might seek to include alcohol-focused preventive interventions and offer guidance for students during orientation sessions. Brief online pre-departure interventions promoting engagement and participation in the host culture and correcting overestimations of peer drinking have revealed promising results among American CMSs ([Pedersen, 2012](#)) and might be fruitfully tested among European study abroad students as well.

More generally, intervention development does not typically account for cultural dissimilarities in eligible recipients. As over 270,000 students elect to study abroad in Europe, students who will also be unfamiliar with host country processes, further work is required to

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account for this group. In particular, work is required to better understand the motivations for drinking to excess, to characterise the harms students are exposed to, to tailor intervention materials to the needs of this disparate population, and to provide advice that addresses the health and legal needs study abroad students may present with.

Declaration of interest

The authors declare that they have no competing interests.

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References

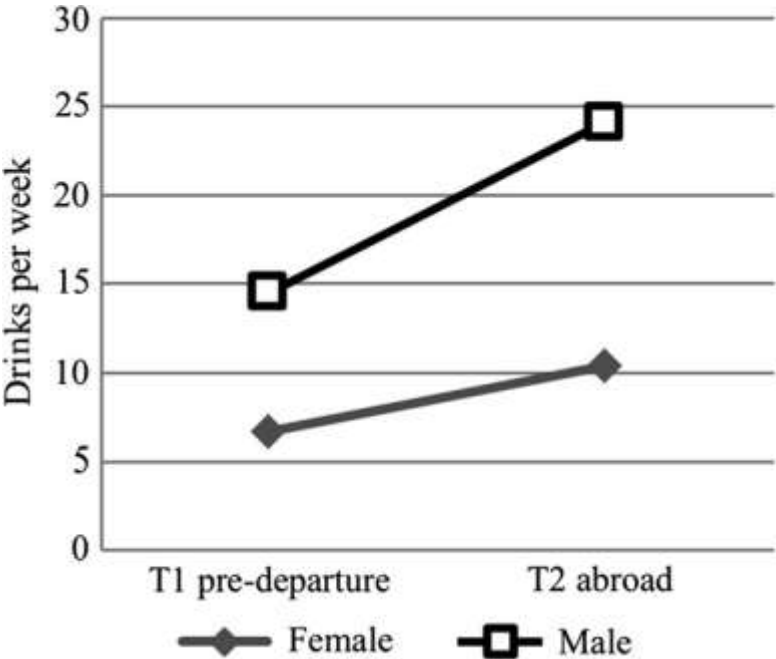
- Bellis, MA, Hughes, KE, Calafat, A, Juan, M, Schnitzer, S (2009) Relative contributions of holiday location and nationality to changes in recreational drug taking behaviour: a natural experiment in the Balearic Islands. *Eur Addict Res* **15**: 78-86.
- Bloomfield, K, Hope, A, Kraus, L (2013) Alcohol survey measures for Europe: A literature review. *Drugs: Education, Prevention, and Policy* **20**: 348-60.
- European Commission (2014) *Erasmus – Facts, Figures & Trends. The European Union support for student and staff exchanges and university cooperation in 2012-13*. Luxembourg: Publications Office of the European Union.
- Flack, WF, Jr., Kimble, MO, Campbell, BE, Hopper, AB, Peterca, O, Heller, EJ (2014) Sexual Assault Victimization Among Female Undergraduates During Study Abroad: A Single Campus Survey Study. *J Interpers Violence*: 1-14.
- Hummer, JF, Pedersen, ER, Mirza, T, Labrie, JW (2010) Factors Associated With General and Sexual Alcohol-Related Consequences: An Examination of College Students Studying Abroad. *J Stud Aff Res Pract* **47**: 421-38.
- Kahler, CW, Hustad, J, Barnett, NP, Strong, DR, Borsari, B (2008) Validation of the 30-Day Version of the Brief Young Adult Alcohol Consequences Questionnaire for Use in Longitudinal Studies. *J Stud Alcohol Drugs* **69**: 611-15.
- Kahler, CW, Strong, DR, Read, JP (2005) Toward efficient and comprehensive measurement of the alcohol problems continuum in college students: the brief young adult alcohol consequences questionnaire. *Alcohol Clin Exp Res* **29**: 1180–89.
- Kuntsche, E and Labhart, F (2012) Investigating the Drinking Patterns of Young People Over The Course of The Evening At Weekends. *Drug Alcohol Depend* **124**: 319-24.
- Lee, C, Lewis, M, Neighbors, C (2009) Preliminary examination of Spring Break alcohol use and related consequences. *Psychol Addict Behav* **23**: 689–94.

STUDY ABROAD STUDENTS' DRINKING BEHAVIOUR

- Mallett, KA, Marzell, M, Turrisi, R (2011) Is Reducing Drinking Always the Answer to Reducing Consequences in First-Year College Students? *J Stud Alcohol Drugs* **72**: 240-46.
- Pedersen, ER (2012) Brief online interventions targeting risk and protective factors for increased and problematic alcohol use among American college students studying abroad: University of Washington.
- Pedersen, ER, Cruz, RA, Labrie, JW, Hummer, JF (2011) Examining the relationships between acculturation orientations, perceived and actual norms, and drinking behaviors of short-term american sojourners in foreign environments. *Prev Sci* **12**: 401-10.
- Pedersen, ER, LaBrie, JW, Hummer, JE (2009) Perceived Behavioral Alcohol Norms Predict Drinking for College Students While Studying Abroad. *J Stud Alcohol Drugs* **70**: 924-28.
- Pedersen, ER, Larimer, ME, Lee, CM (2010) When in Rome: factors associated with changes in drinking behavior among American college students studying abroad. *Psychol Addict Behav* **24**: 535-40.
- Pedersen, ER, Skidmore, JR, Aresi, G (2014) Demographic and Predeparture Factors Associated with Drinking and Alcohol-Related Consequences for College Students Completing Study Abroad Experiences. *J Am Coll Health* **62**: 244-54.

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Figure 1. Number of drinks per week at pre- and post-departure by gender.



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Table 1

Descriptive statistics of drinking pattern measures by gender of participants and time of assessment ^a

Variables	Statistics	Female (N= 83)		Male (N= 33)	
		<u>Pre-departure</u>	<u>Abroad</u>	<u>Pre-departure</u>	<u>Abroad</u>
Drinks per week	Mean	6.7	10.4	14.3	23.7
	(SD)	(6.68)	(9.65)	(14.23)	(20.48)
HED frequency	25 percentile	0.00	0.00	0.00	0.00
	Median	0.50	1.00	1.00	3.00
	75 percentile	2.00	3.00	4.00	7.50
Episodes of drunkenness ^b	25 percentile	1.00	1.00	1.00	1.00
	Median	1.00	1.00	1.00	2.00
	75 percentile	1.50	2.00	2.00	2.00
Negative consequences	25 percentile	0.00	0.00	0.00	1.00
	Median	1.00	2.00	2.00	4.00
	75 percentile	3.00	5.00	5.00	7.00

^a Five outliers were excluded. ^b 1 = never, 2= 1-2 times, 3= 3-5 times, 4= 6-9 times.