Number of pages: 30

Number of tables: 4

Number of figures: 0

Supplemental material: 5 tables

A mixed methods cross-cultural study to compare youth drinking cultures in Italy and the U.S.A.

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A mixed methods cross-cultural study to compare youth drinking cultures in Italy and the U.S.A.

Abstract

Aims: To compare the drinking cultures of youth in the U.S.A. and in Italy.

Method: Sequential explanatory mixed method design. Phase 1. Multigroup Latent Class Analysis was used to identify subgroups of drinkers from samples of 424 (61.3% female) Italian and 323 American college students (57.3% female). Phase 2. Focus group interviews with 41 Italian and 47 American youth were used to collect narratives on features of the two drinking cultures.

Results: Four partially invariant subgroups of drinkers were found. Most participants (>75%) in both countries concentrated drinking during weekends. Overall, U.S. drinkers displayed greater probabilities to report risky drinking behaviors and experience negative consequences as compared to comparable subgroups of Italian drinkers. Discrepancies in terms of socialization processes during childhood (i.e., permissiveness), and underlying cultural assumptions in regard of alcohol consumption (i.e., purposes of alcohol use) may explain differences in how alcohol is used in the two countries.

Conclusions: Findings suggest there are crucial differences in societal schema of beliefs, informal social norms, practices, and values attached to alcoholic beverages across the U.S.A. and Italy. These results demonstrate the need for culturally-tailored alcohol preventive interventions and clinical practice targeted to young people that capitalise on such differences.

Keywords: Drinking cultures; Cross-cultural research; Young adults; Italy; U.S.A.

Introduction

Over the last few decades, both general (e.g., homogenization of lifestyles, greater female independence) and alcohol-specific factors (e.g., globalization of alcohol marketing, moves toward greater homogeneity of alcohol legislation and regulation) have contributed to a reduction in cultural differences in drinking practices across countries (Room, 2010; Savic, Room, Mugavin, Pennay, & Livingston, 2016). In Western countries there has been a general shift towards hedonistic drinking at the expense of other use values, such as ritualistic or convivial (Gordon, Heim, & MacAskill, 2012). However, different drinking cultures continue to exist and have a substantive effect on alcohol use behaviors and related problems (Castro, Barrera, Mena, & Aguirre, 2014; Savic et al., 2016). Drinking cultures have been conceptualized as schema of beliefs, practices, and values maintained by a cultural group or society regarding alcohol use (Savic et al., 2016). What is unclear is what is left of traditional drinking cultures among youth in Western countries. Cross cultural research allows to identify risk and protective factors across drinking cultures and inform culturally-tailored interventions.

The research on drinking cultures has evolved in parallel with the general cross-cultural literature, and the current dominant approach is to characterize cultures through their position on one or more dimensions (e.g., proportion of abstainers, perceptions of un-acceptable alcohol use behaviors) using quantitative methods (Castro et al., 2014). This dimensional approach, however, has been criticized for being simplistic, because it tends to '*assign each culture a single emblematic drinking practice derived from average scores on the selected dimensions*' (Ally, Lovatt, Meier, Brennan, & Holmes, 2016, p. 1568) (p. 1568). An alternative approach is represented by the attempt to provide more comprehensive descriptions of patterns of alcohol use, identify typologies of drinkers, and compare them across countries, though the literature using this approach is still at a nascent stage (Göbel, Scheithauer, Bräker, Jonkman, & Soellner, 2016).

In recent years, there has been a growing recognition that qualitative and quantitative methods can be integrated to provide contextualized descriptions of local cultural processes, and

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provide comprehensive views of what is shared or unique across groups (Schrauf, 2017). However, no mixed methods research study examining cross-cultural variations in alcohol use has been published to date. The aim of this study was to examine cross-cutting features as well as discrepancies in practices and beliefs regarding the consumption of alcohol among youth from the U.S.A. and Italy, and provide suggestions for culturally-tailored interventions.

Drinking cultures in the U.S.A. and Italy

The U.S.A surpasses Italy in respect to several population-level indicators of alcohol use. For example, there are differences in the prevalence of heavy episodic drinking (26% in the U.S.A and 22% in Italy) and health consequences (e.g., liver cirrhosis and road traffic injuries) at the general population level (World Health Organization, 2018). There are also differences in the historical and policy context of the two countries. Unlike in the U.S.A. (Oselin, 2013), the 20th century Italian temperance movement has never had a significant influence on national alcohol policies. Only recently, with the first alcohol framework law in 2001, has the Italian government introduced stricter regulations to limit alcohol purchase to people younger than 18 (Beccaria & Rolando, 2015). However, existing laws are poorly enforced and violation of alcohol policies (e.g., alcohol service to underage people) is common. Informal social norms have been considered the forces contributing to relatively low total consumption levels and alcohol-related risks (Beccaria, Molinengo, Prina, & Rolando, 2018). Results of qualitative cross-cultural studies comparing Italy to Nordic countries (i.e., Finland, Sweden) (Rolando & Beccaria, 2018) suggest that Italy is a paradigmatic example of the non-intoxication oriented drinking culture: socialization into alcohol often occurs early in life and in the family setting (Rolando, Beccaria, Tigerstedt, & Törrönen, 2012), alcohol use is relatively integrated into everyday life (e.g., to enhance enjoyment of food), and there is a negative stigma of drunkenness (Aresi & Pedersen, 2016; Beccaria, 2010; Piumatti, Lietz, Aresi, & Bjegovic-Mikanovic, 2018). There is debate on whether or not, gender differences in drinking patterns and acceptability of drinking by males and females still characterize Mediterranean and non-intoxication drinking cultures especially in regard of younger people

(Vieno, Lenzi, Santinello, & Cavallo, 2013; Wilsnack, Wilsnack, Kristjanson, Vogeltanz-Holm, & Gmel, 2009).

In contrast, the intoxication-oriented drinking culture, characterized by ambivalent attitudes towards alcohol use, higher propensity for risky drinking and positive expectations of the consequences of alcohol use, has been associated with English-speaking and Scandinavian countries. For example, studies of American youth indicate alcohol misuse to achieve intoxication is common (Hingson, Zha, & Weitzman, 2009), and concentrated on weekends and specific events (Neighbors et al., 2011; Pedersen, Skidmore, & Aresi, 2014). However, studies have predominantly used quantitative methods (Bulmer et al., 2015), and, with few exceptions (Link, 2008), little is known in regard of how the American drinking culture compares to that of other countries. In sum, the U.S.A. and Italy represent paradigmatic examples of intoxication and non-intoxication oriented drinking cultures (Room, 2007); thus, allowing for meaningful cross-cultural comparisons and better understanding of the specific features of both.

Study aims and mixed methods design

This study used a sequential explanatory mixed methods design (Ivankova, Creswell, & Stick, 2006) to compare the drinking cultures of youth in Italy and the U.S.A. First secondary analyses of existing quantitative data were conducted and then qualitative data were collected and analyzed.

Phase 1 used Latent Class Analysis to examine differences in drinking patterns across samples of Italian and American college students and aimed to: (1a) Identify distinct subgroups of individuals based on a set of alcohol-related behaviors; (1b) Examine the consistency of the latent class solution and membership proportions across the samples; (1c) Examine rates of experiencing alcohol-related consequences across classes; and (1d) Assess the effect of gender and age of alcohol use onset on latent class prevalence rates. Our overarching hypothesis (Hp1) states that the same four drinking classes found in previous studies on samples of young adults from Italy and the

U.S.A. ([Aresi, Cleveland, Marta, & Alfieri, 2018](#); [Cleveland, Lanza, Ray, Turrisi, & Mallett, 2012](#))[1] will be identified in both samples. We also expect across-country variation in the interpretation of certain classes, a greater proportion of risky drinkers in the U.S.A. sample, and differences in the likelihood of experiencing alcohol-related negative consequences by members of analogous classes (Hp2). Thirdly, we generally expect that male gender will be associated with a greater probability of belonging to riskier drinking pattern classes in both countries ([Wilsnack et al., 2009](#)). However, despite recent gender convergence in patterns of heavy alcohol use ([Vieno et al., 2013](#)), we expect the Italian drinking culture to remain more anchored to traditional values. Thus, we expect gender differences to be more pronounced in the Italy sample (Hp3). Finally, consistent with previous studies ([Kuntsche, Rossow, Engels, & Kuntsche, 2016](#)), we expect younger age of alcohol use onset to be associated with membership in riskier drinking classes in both samples (Hp4).

Phase 2 used focus group interviews with Italian and American youth to: (2a) Collect narratives on features of the two drinking cultures, and (2b) Elaborate on the quantitative results obtained in the first phase. Ethical approval for this study was obtained from the Università Cattolica del Sacro Cuore and Washington State University Institutional Review Boards.

Phase 1

Methods

Participants. Participants of the U.S.A. sample were drawn from a previous intervention study conducted at a large, public northeastern university in the U.S.A. ([Turrisi et al., 2013](#)). In the original study, participants were randomly selected incoming first-year students. For the current study, only students who were assigned to the non-intervention control condition ($N = 470$) and completed the follow-up survey that occurred in 2010 during the fall of the students' second year (N = 375) were included. Lifetime abstainers ($N = 52$; 13.9%) were excluded from the analyses, resulting in a final sample of 323 students (57.3% were female and mean age was 19.2 years; SD = 0.46; range 18 – 20 years).

Participants of the Italy sample were drawn from a pre-recruited Web panel (Panel Giovani Ipsos – Toniolo Institute) representative of the Italian young adult population (Aresi, Cleveland, et al., 2018). In December 2015 panelists completed an online survey. For this study, sophomore undergraduate students were selected (N = 476). Lifetime abstainers (N = 52; 10.9%) were excluded from the analyses. This resulted in an analytic sample of 424 current or past drinkers. (61.3% were female and mean age was 20.5 years; SD = 1.22; range 18 – 22 years).

Measures. In both surveys, participants responded to an item that assessed age at alcohol use onset (described as having had more than a few sips). Next, participants indicated the number of drinks consumed each day of a typical week in the last three months, using the Daily Drinking Questionnaire (Collins, Parks, & Marlatt, 1985), how many times during the past month they had gotten drunk, and the number of times they had consumed four (females) or five (males) or more drinks within two hours. Participants were also asked the maximum number of drinks consumed, and the number of hours spent drinking, on the occasion that they drank the most in the previous month, using the Quantity/Frequency/Peak Questionnaire (Marlatt et al., 1998). Examples of drinks (e.g., a 250ml beer) containing approximately 10g pure ethanol were presented. From these open-ended responses, peak blood alcohol content (BAC) was calculated using weight and sex following established guidelines (Matthews & Miller, 1979).

The summed score of four dichotomous items (0 = no, 1 = yes) from the Young Adult Alcohol Problems Screening Test (Hurlbut & Sher, 1992) represented the total number of consequences experienced in the previous 30 days. These items reflect a range of commonly reported consequences by college students[2] (Mallett et al., 2011).

Analyses: Eleven dichotomous indicators of drinking were developed: (1) past month alcohol use; (2) past month drunkenness; (3) peak BAC greater than .08 on last drinking occasion; (4) past month Heavy Episodic Drinking (HED); and (5–11) indicators of alcohol use for each day of a typical week. Based on these indicators, sub-groups of individuals characterized by common patterns of multiple alcohol use behaviors were identified using Latent Class Analysis. Following

established recommendations (Lanza, Dziak, Huang, Xu, & Collins, 2011), a series of statistical

models were estimated first in the combined sample and then separately within each country,

followed by examination of measurement invariance. In addition, differences in rates of

experiencing alcohol-related consequences by members of the classes, and the influence of two

covariates (i.e., gender and age of alcohol use onset) on the class membership probability, were

analyzed, separately by country[3], using respectively the pseudo class method[4] and the 3-step

procedure (Asparouhov & Muthén, 2014). M-Plus 7.11 was used for all analyses (Muthén &

Muthén, 1998-2010).

Results of phase 1

Descriptive Statistics. Italy and USA participants did not significantly differ in terms of

gender ($\chi2$ (1) = 1.246, $p > 0.05$), though significant differences in age ($t(744) = 21.143$, $p < 0.001$)

were found. Supplemental Table S1 displays the proportion of participants who reported each

drinking behavior by country, and by gender separately within each country. American participants

were more likely to report being drunk, having engaged in HED and having reached 0.08 BAC level

in the past month. Mean age of alcohol onset was 16.4 ($SD = 1.87$) and 16.0 ($SD = 1.82$) for the

Italy and U.S.A. sample, respectively[5].

Identification of Latent Classes of Alcohol Use. Although each of the relative fit indices

(AIC, BIC, aBIC, LRT) tended to decrease with each additional solution, the relative reduction in

these values substantially diminished beyond the four-class solution, and the aBIC increased

beyond the four-class solution in the overall and the Italy samples (Table 1). Further inspection of

the five-class solution in the U.S.A. sample revealed two latent classes that were not clearly

distinguished and one comprised only a small proportion (2%) of the sample. For these reasons and

because the four-class model was consistent with results of previous studies (Aresi, Cleveland, et

al., 2018; Cleveland et al., 2012), it was deemed the best-fitting, most interpretable and most

parsimonious solution to the data for both countries. The four classes were labeled: Current Non-

Drinkers (CND), Weekend Non-Risky Drinkers (WNRD), Weekend Risky Drinkers (WRD), and

Daily Drinkers (DD). Supplemental Table S2 presents the results of the four-class model for the full sample, and separately by country. Sensitivity analyses for age differences across the two samples demonstrated that the inclusion of age as an additional indicator variable had a negligible effect on the LCA model results (Table S3).

Table 1

Assessing invariance of item response probabilities across countries. Comparing M1a and M2a tested measurement invariance among American and Italian participants (Table 2), the difference likelihood ratio test for this comparison was significant (LRT = 701.632, $p < .001$), and the AIC and BIC for the freely estimated model (M1a) were both smaller than values for the constrained model (M2a). Testing measurement invariance of nested models showed that model fit did not significantly decrease if CND class item response probabilities were constrained (M2b) (LRT = 8.68, $p > .05$), whereas constraining probabilities of further classes incurred in poorer model fit (M2c-d). Therefore, there was evidence of partial invariance across countries (among the CND class only).

Table 2

Table 3 presents the results of the selected four-class model (M2b) separately by country. About 12% of the Italy and 18% of the U.S.A. samples belonged to the CND class, defined by very low probabilities of reporting any of the current drinking behaviors. In the Italy sample, WNRDs (57% of the sample) were likely to report using alcohol in the previous month but were most likely to report drinking only on weekends (Saturday); they were unlikely to report any of the three risky drinking behaviors (i.e., drunk in the past month, HED, or peak BAC above 0.08). In the U.S.A. sample, WNRDs (29% of the sample) displayed a similar pattern of low engagement in risky drinking behaviors and alcohol use concentrated on weekend days (Friday and Saturday), except they were likely to report having been drunk in the past month.

Both the Italy and U.S.A. samples featured a class of WRDs (22% and 48% respectively), who were distinguished by elevated probabilities of reporting all three risky drinking behaviors. However,

these probabilities were higher among the U.S.A. sample (range of 0.96 – 1.00), compared to the Italy sample (range of 0.55 – 0.66). Finally, a class of people characterized by high probabilities of drinking on all seven days of the week (DDs) was found in both samples (9% of the sample in Italy and 5% in the U.S.A), though comparison across the two countries again revealed noticeable differences in probabilities of reporting the three risky drinking behaviors: high in the U.S. sample (all three response probabilities were 1.00, reflecting certainty of these behaviors), moderate among the Italian sample (range of 0.36 – 0.51).

Table 3

We also estimated the mean count of consequences experienced in the previous 30 days for each of the four latent classes. The overall test of significance was significant ($p < 0.001$) in both samples. In the U.S.A. sample, pairwise equality tests of means across classes indicated that members of the DD class experienced the greatest number of consequences, (WRD, $\chi2 = 13.920$, p < .001; WNRD, $\chi2 = 52.981$, p < .001). Members of the WRD class experienced more consequences than members of the WNRD ($\chi2 = 46.501$, p < .001), who experienced more consequences than CND members ($\chi2 = 13.351$, p < .001). In the Italy sample, results indicated that members of the WNRD class did not experience a greater number of consequences, compared to members of the CND class ($\chi2 = 0.573$, p > .05). Members of the WRD and DD classes experienced approximately the same number of consequences ($\chi2 = 0.006$, p > .05), and both experienced more consequences than members of the WNRD ($\chi2 = 44.059$, p < .001; $\chi2 = 17.461$, p < .001; respectively).

Gender and age of alcohol onset as predictors of latent class membership. The associations between latent class membership (excluding non-current drinkers) and the covariates show that, in the U.S.A. sample, males and females were equally likely to belong to the WRD class, though members of the DD class were six times more likely to be male than female (OR = 6.30; 95% CI: 1.44, 27.60). In the Italy sample, members of the WRD were twice as likely to be female (OR = 0.46; 95% CI: 0.25, 0.85), though males and females were equally likely to be members of

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the DD class. Younger age of alcohol use onset was related to increased probability to be a member of the WRD and DD classes in both samples (Table S4).

Phase 2

Methods

     Data collection: Gender consistent focus group interviews with young adults from the U.S.A. and Italy were conducted between December 2017 to March 2018. U.S.A. participants were recruited through class visits at a large Northwestern public university, and received a $10 voucher as an incentive. Italy participants were approached by research assistants at a large university in the North of Italy and snowball sampling was used to increase recruitment. Lifetime abstainers and those who had not been raised (i.e., did not attend at least high school) in one of the two countries were excluded. The interview topic guides in English and in Italian were developed in parallel across the two study sites, and covered participants' experiences of socialization into alcohol, and representations and meanings attached to alcohol use. In addition, they were asked to read (and comment) a brief description of each type of the typology of drinkers (i.e., results of the study Phase 1) of their respective country. In both countries, each focus group was conducted by a researcher (GA in the U.S.A., and E.M. in Italy) with training and expertise in qualitative research. A student research assistant was present to take notes.

     Participants. Eight and seven focus group interviews were conducted in the U.S.A. and Italy, respectively, with a total of 89 (U.S.A. = 47) participants. Each focus group session lasted approximately 1.5 hours and consisted of four to nine participants. Participants from the U.S.A. (56.2% female; mean age = 20.5, SD = 2.17, range 18 – 27 years; 61% White, 13% Hispanic/Latino, 8% African American, and 18% of mixed ethnicity or others) were all undergraduate students. Among participants from Italy, 78.1% were college students or had recently graduated, and 58.5% were female (mean age = 22.4, SD = 2.05, range 19 – 28 years; all white).

     Analyses. Interviews were digitally recorded and transcribed verbatim. NVivo 11 (QSR International Pty Ltd., 2014) was used to support data management and analysis. A matrix,

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informed by theoretical work on the main features of drinking cultures (Room, 2007) was finalized and used to code all interviews. A thematic analysis of the transcripts was conducted (Braun & Clarke, 2006). Agreement between two independent coders (first and second, and first and sixth author, for U.S.A. and Italy interviews respectively) on two focus group transcripts per country was assessed. For all codes, the inter-rater agreement was acceptable (above 80%) (McHugh, 2012).

Results of phase 2

Results are organized into three main themes reflecting participants' first experiences with alcohol during childhood and adolescence, representations and meanings attached to alcoholic beverages and their relation with food, and opinions and comments on the Latent Class Analysis typology of drinkers. Table 4 and supplemental Table S5 contain illustrative quotations.

Table 4

Experiences of socialization into alcohol. Italy participants described their first experiences with alcohol as almost always happening in a family environment with older adults encouraging them to have a taste of red or sparkling wine. Except in a few (three) cases, participants' narratives show a great deal of families' permissiveness regarding alcohol use in small quantity by children. In contrast, U.S.A. participants reported a variety of experiences with alcohol, demonstrating a more diverse cultural approach to the issue. Family attitudes varied from very negative to fairly relaxed and permissive. A relative minority of participants (seven) reported their parents encouraged them to have a sip of a drink, while the others reported that any contact with alcohol by young people was disapproved. Four of the U.S.A. participants reported that alcohol was viewed very negatively in their family because of family members' history of alcohol abuse.

Despite differences across the two countries in early experiences with alcohol, there were similarities in the first experiences of actual *alcohol consumption*. This finding may account for younger age of alcohol onset being related in the Latent Class Analysis study to membership in the WRD and DD classes across both samples. In both countries, the majority of participants reported what they considered their first episode of actual consumption taking place outside of the family

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environment in company of peers, generally over the years of high school years. In most cases these episodes coincided with, or closely preceded, their first experiences of excessive drinking. Main differences were in regard to drinking location: in a public venue, such as a bar or a club, or birthday parties and other event celebration among Italian participants; at a party or under special circumstances where alcohol was available among U.S.A. participants. For many U.S.A. students, moving away from parental home to the less supervised college campus context, resulted in a great increase in alcohol use and heavy drinking.

   Representations of alcoholic beverages and their relation with food. In describing alcoholic beverages, U.S.A. participants made few distinctions among different types (e.g., wine and hard liquors) and stressed those features that made alcohol a drug (i.e., its psychoactive and addictive properties). They described the recreational use of alcohol during a party or a social event as the most common experience among people of their age. Consistently, food intake was only instrumentally linked to alcohol use: For many, having food before a party or a night out represented a strategy to reduce the chances to get too drunk, while others reported they purposely refrained from eating as a way to quickly achieve a state of intoxication. At the same time, as young people grow older and attain legal drinking status, alcohol use was no longer restricted to the party scene. Once they have turned 21, people don't have to rely on others to obtain alcohol, they are allowed to purchase beverages of better quality, and alcohol use may become more sophisticated and be matched with certain foods. Italy participants generally agreed that alcoholic beverages are part of the diet and the overall culture. They often referred to a traditional way of drinking that was typical of previous generations, but is still present. Very specific distinctions between how alcohol is used across different drinking settings and between alcoholic beverages (hard liquors most often consumed during a night out with friends at a party or in a club, wine and beer being associated with convivial settings and food consumption) were made. In other words, as compared to their U.S.A. counterparts, Italian young adults displayed a more diverse array of options of alcohol use, beyond recreational and psychoactive use.

Comments on the Latent Class Analysis typology of drinkers. Most participants in both countries related to the typology identified in Phase 1 of the study and said it was credible and reflected their personal experience. DDs were the most discussed drinker type, because they deviated from the more common weekend-restricted drinking patterns. However, the representations of daily drinkers varied substantially between the two countries.

For U.S.A. participants, DDs represented the small group of students who have serious issues with alcohol. This is because they generally believed that when underage college students have a chance to drink, they are predominantly motivated to get drunk and achieve a state of intoxication. This is consistent with indicators of risky drinking item-response probabilities, indicating a high (100%) probability to engage in such behaviors among DDs of the U.S.A. sample. The dominant idea among U.S.A. participants was that drinking on weekdays required an extra effort and commitment (e.g., finding and paying extra money to a provider, or going to every single fraternity party) that can be regarded as a sign of potential alcohol abuse or dependence. Moreover, the idea that consuming alcohol on an everyday basis is incompatible with adequate functioning in college, and such behavior puts students at risk of academic failure and drop out, was stressed.

Having more nuanced ways to consume alcohol, Italy participants were cautious in assuming that those who consume alcohol on a daily basis were problem drinkers. They still considered daily drinkers as a minority, though the dominant representation was that DDs are people that adopt both the traditional daily drinking pattern and the more modern weekend/event-specific drinking (i.e., have a drink with meals on most days of the week, but at times may also drink heavily). This is consistent with indicators of risky drinking item-response probabilities, indicating a moderate (around .40) probability to engage in such behaviors among DDs.

Discussion

Representing the first attempt to integrate quantitative and qualitative methods in the field of alcohol cross-cultural research, the current study used a mixed method design to compare practices

and beliefs regarding the consumption of alcohol among youth from the U.S.A. and Italy: two paradigmatic examples of intoxication and non-intoxication oriented drinking cultures (Järvinen & Room, 2007). Consistent with previous studies (Aresi, Cleveland, et al., 2018; Cleveland et al., 2012), multigroup Latent Class Analysis on data from samples of U.S.A. and Italy college students identified four partially invariant subgroups of drinkers in both countries (Hp1): Current Non-Drinkers (CND), Weekend Non-Risky Drinkers (WNRD), Weekend Risky Drinkers (WRD), and Daily Drinkers (DD). Most participants in both countries concentrated drinking during weekends, though overall U.S.A. drinkers displayed greater probabilities to report risky drinking behaviors and experience negative consequences as compared to comparable subgroups of Italian drinkers (Hp2). We found only partial support to our hypothesis (Hp3) that male gender is associated with a greater probability of belonging to riskier drinking pattern classes. In the U.S.A. sample, daily drinkers (a small and high risk subgroup) were more likely to be male, though no significant difference was found for the groups that represent the majority of the population (i.e., weekend risky and non-risky drinkers). In contrast with our expectations, Italian females were more likely to be weekend risky drinkers. This result is consistent with those suggesting a convergence in drinking patterns among Italian male and female adolescents (Vieno et al., 2013) and a general trend toward normalisation of female drinking as compared to past generations (Törrönen, Rolando, & Beccaria, 2017). It also suggests that females may be even at greater risk as compared to their male counterparts. Our study, therefore, contributes to the debate in the field and provide further support to the gender homogenization hypothesis across cultures.

Focus group interviews aided interpretation of quantitative results. At least until they attain legal drinking status, American youth's representation of alcoholic beverages is predominantly towards considering alcohol as a psychoactive drug to be used for recreational purposes with food being instrumentally used to control one's intoxication level. Conversely, Italians display a more diverse array of options of alcohol use, that include moderate convivial drinking where certain alcoholic beverages are matched with certain foods. Therefore, even though most young Italians

moved away from a lifestyle in which there is a total integration of alcoholic drinks into daily life

and hedonistic drinking is prevalent (Aresi, Fattori, Pozzi, & Moore, 2018; Gordon et al., 2012),

some features of the traditional drinking culture have been retained. More specifically, informal

social norms in regard of using alcohol to reach a functional level of intoxication to enhance

enjoyment of food and the pleasure of being with friends may indeed represent a protective factor

against heavy alcohol use and consequences (Aresi & Pedersen, 2016; Beccaria, 2010).

Such differences in how alcohol is used and understood by Italian and U.S.A. young adults

become apparent when daily drinking groups are compared. Consistent with research that suggests

that the relatively small fraction of the drinking college population that extends consumption

beyond the typical Thursday – Sunday pattern are at the greatest risk (Hoeppner et al., 2012), results

indicate that this drinking pattern is regarded as highly problematic and socially censored among

youth from the U.S.A. Frequent alcohol use is a typical feature of non-intoxication drinking

cultures and appears to be still relatively common among Italian youth. This drinking pattern was

not interpreted as inherently problematic. This is coherent with results of previous studies indicating

that heavy alcohol use, but not drinking frequency *per se*, is related to poor outcomes, including

psychological distress and lower well-being, in this population (Piumatti et al., 2018). Results of

this study on how alcohol use frequency is related to harm and is socially understood are important

to identify high-risk groups and inform targeted interventions in the two countries.

Despite the differences in socialization strategies (i.e., permissiveness and gradual approach

in Italy, range of socialization strategies and ambivalent societal attitudes towards alcoholic

beverages in the U.S.A.) (Beccaria, 2010), we found similarities of first experiences of actual

alcohol consumption across the two countries (i.e., they take place outside of the family, and often

coincide with, or closely precede, first experiences of excessive drinking). Thus, it is not surprising

that younger age of alcohol onset was associated with adoption of riskier drinking patterns in both

countries (Hp4), suggesting that age at first drink, when it's not conceptualized as early moderate

drinking in the family context (i.e., sipping) (Donovan & Molina, 2014), is a risk factor for alcohol negative outcomes later in life across countries and drinking cultures.

In the U.S.A., previous studies have shown that parents' anti-alcohol use socialization with children is protective against early onset of alcohol use (Ennett, Jackson, Bowling, & Dickinson, 2013), possibly because such attitudes are consistent with the overall culture and policy context in respect of alcohol use. However, it is unclear whether this strategy would prove effective, or even be counterproductive, in different cultural settings, like Italy, where it would collide with the culturally-rooted gradual approach to drinking in the family that establishes shared informal norms around moderate alcohol use, that seem to continue to exert their positive influence throughout life (Rolando et al., 2012). We speculate this is related to the transition to adulthood being postponed among Italians, who leave parental home towards the end of emerging adulthood at age 26-28 (Scabini, Marta, & Lanz, 2006), thus prolonging parents' modeling role throughout young adulthood. Future research should examine cross-cultural differences in how social norms around alcohol use learned during childhood and adolescence are translated into drinking behavior during young adulthood, especially focusing on the transition out of the parental home – a known risk factor for U.S.A. college students.

Limitations

The U.S.A. sample of the quantitative study was drawn from a single institution and may not be representative of the overall college student population. Both the Italian and the U.S.A. samples were composed of college students. Future studies that examine these questions with other samples of emerging adults are needed to generalize these findings. Despite adopting methods to reduce bias, including use of valid measures, alcohol intake may have been under-reported, as is common in all self-report studies. There were lags between Phase 1 data collection in the U.S.A. and Italy, and between Phase 1 and Phase 2 in both countries. It is possible that some changes in drinking patterns among youth have occurred in the meantime, thus potentially reducing the validity of our findings. However, because results of more recent studies are consistent with ours, there is evidence

of the stability of the typology of drinkers (Cleveland, Mallett, White, Turrisi, & Favero, 2013). Lastly, slightly different recruitment procedures were used in Phase 2 in the two study sites. In Italy, the use of snowball sampling and lack of monetary compensation may have reduced the variability in the data, because some participants already knew each other, and the likelihood of low-income students to be recruited.

Conclusions

This study contributes to the literature in the field of alcohol cross-cultural research. Results demonstrate that, in spite of a convergence between intoxication and non-intoxication oriented drinking cultures in Western countries (e.g., alcohol use concentrated over weekend days for recreational purposes), differences in socialization processes, especially during childhood, and values attached to alcoholic beverages still exist and are related to differences in drinking patterns and risky drinking. Accordingly, it is important for preventive interventions and policy developments aimed at reducing alcohol-related problems to be culturally-tailored and fit within the social and cultural contexts of implementation.

Notes

[1] The four drinking classes were: those who have not been drinking recently (Current Non-Drinkers - CND), two classes of weekend drinkers distinguished by the probability of engaging in risky drinking (Weekend Non-Risky Drinkers – WNRD, and Weekend Risky Drinkers - WRD), and one class of Daily Drinkers (DD).

[2] The items were: "Have you had a headache (hangover) the morning after you had been drinking?", "Have you felt very sick to your stomach or thrown up after drinking?", "Have you showed up late for work or school because of drinking, a hangover, or an illness caused by drinking?", and "Have you driven a car when you knew you had too much to drink to drive safely?".

[3] M-Plus does not allow for the inclusion of covariates and distal outcomes within multigroup Latent Class Analysis models.

[4] Using the three-step approach incurred in estimation problems. The simulation studies in Clark and Muthen (2009), show that the pseudo class method works well when, as it is in this study, the entropy is large.

[5] A statistically significant difference was found ($F(1, 737) = 5.472$, p < 0.05, partial $\eta2 = 0.007$), but was deemed as negligible after inspection of mean values and proportion of variance explained.

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Table 1. Model fit statistics for Latent Class Analysis models with 2 to 7 latent classes for the full sample, and separately by country.

Model:	-*LL*	AIC	BIC	aBIC	LMR-LRT	Entropy
Full Sample						
Two class	3,486.150	7,018.300	7,124.469	7,051.435	1,441.470***	86
Three class	3,216.358	6,502.715	6,664.278	6,553.139	532.872***	91
Four class	3,055.800	6,205.601	6,422.556	6,273.313	317.120***	90
Five class	3,022.363	6,162.725	6,435.073	6,247.725	66.044	81
Six class	2,990.385	6,122.770	6,450.511	6,225.059	63.159**	82
Seven class	2,968.773	6,103.545	6,486.679	6,223.122	42.687***	83
USA						
Two class	1,543.737	3,109.473	3,151.027	3,116.137	872.274***	96
Three class	1,101.309	2,248.618	2,335.504	2,262.550	181.497***	88
Four class	1,009.251	2,088.503	2,220.720	2,109.705	101.325**	89
Five class	957.858	2,009.716	2,187.266	2,038.187	32.485***	93
Six class	941.381	2,000.763	2,223.644	2,036.503	18.356	91
Seven class	932.071	2,006.142	2,274.356	2,049.152	15.123	84
Italy						
Two class	1,922.767	3,891.533	3,984.677	3,911.690	649.424*	92
Three class	1,803.863	3,677.727	3,819.467	3,708.400	234.575**	82
Four class	1,740.256	3,574.511	3,764.849	3,615.701	125.487***	87
Five class	1,723.359	3,564.719	3,803.653	3,616.426	33.333	88
Six class	1,707.714	3,557.429	3,844.960	3,619.652	30.865*	88
Seven class			Best LL not replicated			

Note: LL = log likelihood; AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion.
* p < 0.05, ** p <0.01, *** p < 0.001.

Table 2. Model fit statistics for tests of group differences in latent class measurement and latent class prevalence rates.

Model	*-LL*	*df*	AIC	BIC	LRT	p-value
Grouping Variable = Country (2 groups)						
Model M1a: Item-responses vary across countries	3,209.045	3,998	6,608.091	7,046.617		
Model M2a: All item-responses equal across countries	3,369.799	4,036	6,841.597	7,077.017	701.632	< 0.001
Model M2b: CND class item-responses equal across countries	3,271.721	4,009	6,603.442	6,991.192	17.524	> 0.05
Model M2c: CND and DD classes item-responses equal across countries	3,237.640	4,020	6,621.280	6958.252	119.025	< 0.001
Model M2d: CND, DD and WRD classes item-responses equal across countries	3,296.027	4,026	6,716.054	7,002.250	288.605	< 0.001

Note: LL = log likelihood; *df* = degrees of freedom; AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion. LRT = Likelihood Ratio Test. Total sample size N = 747. Models M1*a* and M2a/b/c/d refer to nested models that tested measurement invariance across countries.

Table 3. Item-response probabilities and class prevalence rates for partially constrained four-class Latent Class Analysis model by country.

	Latent Class			
	Current Non-Drinkers[a]	Weekend Non-Risky Drinkers	Weekend Risky Drinkers	Daily Drinkers
U.S.A.				
Any drink in past month	0.24	**0.98**	**1.00**	**1.00**
Drunk in past month	0.00	**0.76**	**1.00**	**1.00**
Past month HED	0.02	0.29	**0.90**	**1.00**
Peak BAC > 0.08	0.00	0.31	**0.96**	**1.00**
Any drink Monday	0.01	0.00	0.00	**0.78**
Any drink Tuesday	0.00	0.00	0.00	**0.53**
Any drink Wednesday	0.00	0.00	0.14	**0.81**
Any drink Thursday	0.00	0.09	**0.53**	**1.00**
Any drink Friday	0.00	**0.87**	**1.00**	**1.00**
Any drink Saturday	0.14	**0.85**	**1.00**	**1.00**
Any drink Sunday	0.00	0.00	0.03	**0.71**
Estimated Prevalence	18%	29%	48%	5%
Mean Number of Consequences	0.80	1.51	2.49	3.42
	Current Non-Drinkers[a]	Weekend Non-Risky Drinkers	Weekend Risky Drinkers	Daily Drinkers
Italy				
Any drink in past month	0.24	**0.94**	**1.00**	**0.97**
Drunk in past month	0.00	0.05	**0.55**	0.41
Past month HED	0.02	0.00	**0.58**	0.36
Peak BAC > 0.08	0.00	0.16	**0.66**	**0.51**
Any drink Monday	0.01	0.00	0.12	**1.00**
Any drink Tuesday	0.00	0.00	0.14	**0.95**
Any drink Wednesday	0.00	0.04	0.20	**0.98**
Any drink Thursday	0.00	0.05	0.18	**1.00**
Any drink Friday	0.00	0.31	**0.67**	**1.00**
Any drink Saturday	0.14	**0.92**	**0.95**	**1.00**
Any drink Sunday	0.00	0.47	**0.53**	**0.97**
Estimated Prevalence	12%	57%	22%	9%
Mean Number of Consequences	0.18	0.36	1.30	1.28

Note: Entries in bold font indicate class-defining probabilities (>0.50). HED = heavy episodic drinking; BAC = blood alcohol content; Estimated Prevalence refers to model-based estimate of latent class prevalence rates.
[a] Probabilities for the Current Non-Drinkers class were constrained to be equal across the two countries.

Table 4. Illustrative quotations by country and theme.

Subthemes	Quotations
	Experiences of socialization into alcohol
First contact with alcohol	**U.S.A.**
	"At family barbeque, for like a birthday. [...] The adults knew to keep it [alcohol] away from children, but I noticed that like a lot of my parents and my parents' friends had like a can in their hand or something. I was seven." (FG4, female)
	"Growing up, alcohol was pretty much like 'no, don't do it', and then like I went to a family reunion. [...] It was probably right before I started high school. [...] It went from being 'when you're a kid like you don't touch alcohol' to [...] there really isn't a problem if you drink in like a family situation." (FG7, male)
	* "[My mum] would always speak about alcohol in many negative connotations: it's toxic and alters people's personalities and their lives. [...] to make sure that I understood how dangerous it was [because] we had a lot of family members who were alcoholics. [...] We always had bags (to disguise their content) [...] and everyone was putting things in closets or changing their cups or whatever." (FG8, male)
	Italy
	"When I was a child I would be given some sparkling wine on special occasions, such as on a birthday or some holidays, but it was just a few sips. It was only later when I was 16, that I was allowed to have wine during meals." (FG4, female)
	"When I was a child there was alcohol, namely wine and beer, at home and I remember seeing it, though it was mainly my grandfather that would encourage me to have a sip. [...] He wanted me to get used to it and not drink 'those gross drinks you get in those clubs'." (FG6, male)
	** "My mum has always been scared of alcohol and would tell me all the time to be extremely careful. She wasn't the kind of parent that would pour me wine" (FG1, female)
First actual alcohol use episode	**U.S.A.**
	"My first time drinking, I was probably 15. My best friend and I just like went to my neighbor's house we were friends with and his parents were gone so we, he like got into his parents' alcohol stash and I think we drank just like vodka." (FG4, female)

"The first time I ever actually legit went out to drink was when I was probably a freshman in high school. I was on a sports team and a lot of the senior guys on the team would always have events and parties. [...] Some of them had fake IDs [...]. The next day I didn't feel very good (laughing)." (FG5, male)

"I think my first time [drinking] was like senior year of high school, is when I got really drunk, because I was a student athlete and I took myself pretty seriously, and after the season was over some people were throwing like a party and, yeah, that's how that happened." (FG7, male)

Italy

"I was at a community event in my home town. It was somehow expected everybody drank, I was with friends. It was the first time I had any alcohol. We drank some liquors and I got drunk. I was young, an adolescent." (FG4, female)

"There was a school friend's 18th birthday party at a club. There was 'open bar' with wine, beer and sparkling wine. That's when I started drinking [...]. Just by chance we did not get too drunk, but I was definitely tipsy." (FG5, male)

"I remember that the very first time I drank I went to a bar with some friends. The drinking age law at that time was 16 or older, and the barman refused to serve alcohol even if I was just two weeks short of my 16th birthday. So, we just went to the bar next door and easily got it." (FG7, female)

Representations of alcoholic beverages and their relation with food

U.S.A.

Participant 1: "Alcohol is defiantly a drug, definitely a drug". Participant 2: "I'd say like in-between, because I know a lot of people who see it as beverage and I also know a lot of people who see it as a drug." (FG1, female)

"The younger you are the more you use it as a drug: to feel the effect. But like as you get older you're like, you do it more for the social aspect of it and not for the effects, because it's not as cool." (FG2, female)

"For under 21, I think [alcohol] is more like a drug than a drink you can have." (FG6, female)

" I still enjoy an occasional weekend of drinking a little too much, even though I'm 21 now, but [...] there's no stigma around it, you don't have to be secretive when you're over 21, it's more casual [...]. If I'm grocery shopping, never before was I looking through the wines, being like

'I wonder which one tastes the best', [...] rather than if it was somebody buying for me I'd be like: 'just literally get the cheapest one that is going to get me drunk'." (FG6, female)

Italy

Participant 1: "In the Italian culture, alcohol is seen more as any other food or beverage". Participant 2: "Indeed, it's part of the diet. I mean wine and some other alcoholic beverages that are not hard liquors, because you know, those are meant to have fun". Participant 3: "Yeah, I see wine as harmless or at least more as a daily thing." (FG1, female)

"Wine and beer are often drank along with food. It is unlikely you drink too much of them [...]. The only time where alcohol may be used inconsiderately is when you pre-drink right before going out to a club." (FG2, female)

"When you drink while you are not eating anything, then you are more likely to get drunk. That's on Fridays and Saturdays drinking hard liquors, whereas certain foods go along well with some wines." (FG3, male)

"I associate low-alcohol drinks, such as beer and wine, with social drinking and food, whereas hard liquors are generally used to have fun on a Saturday night." (FG5, male)

	Comments on the Latent Class Analysis typology of drinkers
Comments on typology overall	**U.S.A.**
	"Weekend non-risky drinkers sound very responsible (laughing). [...] They're people who like to fit in with their friends, and they like to go and have drinks and get drunk, but they're not subscribing to the excessive binge drinking that a lot of college students do. Just sounds like regular kids who know their limits basically." (FG1, female)
	"I can definitely see some of my friends fall in these categories. People I know specifically fall in these four types. [...] Type three (WRD) is probably the most frequent." (FG4, female)
	"I think it kind of categorizes the big streams, we kind of have both sides and then the in-betweens." (FG6, female)
	Italy

"All four types are real. I do know people of all the four types. [...] I'm a type four (DD). I don't get drunk all weekends, but I am used to have some beer or wine on a meal, and it happens that I go out on a weekday night and I get drunk. [...] Then, I do know people who drink exclusively on weekends, and those who drank once in their life, and then had not drunk since." (FG2, female)

"Based on my personal experience, I think there is a type of drinker who is not listed here. I mean the daily drinker that drink heavily every single day and becomes an alcoholic. Though this is pretty unlikely among people our age". (FG4, female)

Comments on DD type	**U.S.A.**

Participant 1: "I think the DD subgroup is just really small". Participant 2: " Yeah, I don't know anybody who is like that, because I can't imagine like drinking every day and then going to classes and being functional and doing well enough to not be asked to leave [...]. If you're drinking every day you are alcoholics for sure." (FG1, female)

"If you're drinking on a daily basis, that's extremely expensive, so that's a different factor you have to count, and the other part, you have assignments on a daily basis, you have to attend class on a daily basis. [...] I don't feel like that's a good recipe for success." (FG5, female)

"I would say like type 4 (DD) is a lot harder as underage to get alcohol outside of parties and events, and if your drinking every day then that's quite the effort to get alcohol. So, it's really hard at that point if you're actively searching out for alcohol every single day it would pass into an addiction." (FG8, male)

Italy

"I am a type four (DD), I drink on an everyday basis, I mean I drink something that is alcoholic every day, though I drink in moderation on most weekdays, and then on some weekends I get drunk, though clearly not all weekends." (FG1, female)

Moderator: "Do you feel there is type of drinker that is missing in this typology?". Participant 1: "The excessive drinker, who gets drunk every single day, the alcoholics." (FG3, male)

"The daily drinker is not necessarily someone who is addicted to alcohol, it can also be someone who drinks a glass of wine on a daily basis, but that doesn't damage your body [...]. You can't be considered an alcoholic." (FG4, female)

Note: Quotations include focus group number and participants' gender. * indicates quotes of participants reporting a family history of alcohol abuse.
** indicates deviant cases in the Italy sample of family negative attitudes towards alcohol use.

Supplementary documents.

Table S1. Proportion of respondents reporting drinking behaviors, by sex and age.

Alcohol Behavior	USA				Italy				Overall
	Overall (N = 323)	Males (N=138)	Females (N=185)	$\chi 2$ test	Overall (N = 424)	Males (N=164)	Females (N=260)	$\chi 2$ test	$\chi 2$ test
Drink in last month	86.7	91.3	83.2	4.45*	86.8	89.6	85.0	1.88	.00
Been drunk in last month	75.2	80.4	71.4	3.50	18.6	20.1	17.7	3.92	239.49***
HED in last 2 weeks	56.3	62.3	51.9	3.49	16.5	12.2	19.2	3.61	130.156***
Most recent BAC level > 0.08	60.1	62.3	58.4	.512	28.5	20.1	33.8	9.29**	74.71***
Typically drink on Sunday	4.6	8.7	1.6	8.93**	47.6	59.8	40.0	15.74***	164.45***
Typically drink on Monday	3.7	6.5	1.6	5.31*	12.0	17.7	8.5	8.08**	16.41***
Typically drink on Tuesday	2.5	4.3	1.1	3.49	11.8	15.9	9.2	4.24*	22.22***
Typically drink on Wednesday	10.5	15.9	6.5	7.50**	15.8	20.7	12.7	4.89*	4.36*
Typically drink on Thursday	32.8	38.4	28.6	3.41	15.6	20.1	12.7	4.22*	30.79***
Typically drink on Friday	78.3	83.3	74.6	3.56	41.5	47.0	38.1	3.26	101.66***
Typically drink on Saturday	78.9	84.1	75.1	3.79	84.9	88.4	82.7	2.57	4.47*

Note: Values indicate % reporting the behavior; *N* =sample size; HED = heavy episodic drinking; BAC = blood alcohol content.
* p < 0.05, ** p <0.01, *** p < 0.001.

Table S2. Item-response probabilities and class prevalence rates for the four-class LCA model by country and for the full sample.

	Latent Class			
	Current Non-Drinkers	**Weekend Non-Risky**	**Weekend Risky Drinkers**	**Daily Drinkers**
Full sample				
Any drink in past month	0.20	**0.96**	**1.00**	**0.98**
Drunk in past month	0.00	0.18	**0.96**	0.49
Past month HED	0.01	0.07	**0.82**	0.49
Peak BAC > 0.08	0.00	0.21	**0.87**	0.58
Any drink Monday	0.01	0.01	0.04	**0.94**
Any drink Tuesday	0.00	0.03	0.01	**0.91**
Any drink Wednesday	0.00	0.05	0.13	**0.98**
Any drink Thursday	0.00	0.06	0.42	**0.94**
Any drink Friday	0.00	0.41	**0.96**	**0.98**
Any drink Saturday	0.17	**0.90**	**0.96**	**1.00**
Any drink Sunday	0.00	0.42	0.10	**0.97**
Estimated Prevalence	**14%**	**46%**	**33%**	**7%**
USA				
Any drink in past month	0.24	**0.98**	**1.00**	**1.00**
Drunk in past month	0.00	**0.72**	**1.00**	**1.00**
Past month HED	0.00	0.26	**0.89**	**1.00**
Peak BAC > 0.08	0.00	0.27	**0.96**	**1.00**
Any drink Monday	0.00	0.00	0.00	**0.77**
Any drink Tuesday	0.00	0.00	0.00	**0.52**
Any drink Wednesday	0.00	0.00	0.14	**0.80**
Any drink Thursday	0.00	0.09	**0.52**	**1.00**
Any drink Friday	0.00	0.83	**1.00**	**1.00**
Any drink Saturday	0.00	0.85	**1.00**	**1.00**
Any drink Sunday	0.00	0.00	0.03	**0.70**
Estimated Prevalence	**17%**	**29%**	**50%**	**5%**
Italy				
Any drink in past month	0.18	**0.96**	**1.00**	**0.97**
Drunk in past month	0.01	0.05	**0.55**	0.41
Past month HED	0.04	0.00	**0.59**	0.36
Peak BAC > 0.08	0.00	0.17	**0.66**	**0.51**
Any drink Monday	0.02	0.00	0.12	**1.00**
Any drink Tuesday	0.00	0.00	0.14	**0.95**
Any drink Wednesday	0.00	0.05	0.20	**0.98**
Any drink Thursday	0.00	0.05	0.18	**1.00**
Any drink Friday	0.00	0.32	**0.66**	**1.00**
Any drink Saturday	0.32	**0.91**	**0.95**	**1.00**
Any drink Sunday	0.00	0.49	**0.53**	**0.97**
Estimated Prevalence	**14%**	**58%**	**19%**	**9%**

Note: Entries in bold font indicate class-defining probabilities (>0.50). HED = heavy episodic drinking; BAC = blood alcohol content; Estimated Prevalence refers to model-based estimate of latent class prevalence rates.

Table S3. Item-response probabilities and class prevalence rates for partially constrained four-class Latent Class Analysis model and unconstrained models with age as covariate by country (sensitivity analysis).

	Latent Class			
	Current Non-Drinkers[a]	**Weekend Non-Risky Drinkers**	**Weekend Risky Drinkers**	**Daily Drinkers**
U.S.A.				
Any drink in past month	0.24	**0.98**	**1.00**	**1.00**
	0.24	*0.98*	*1.00*	*1.00*
Drunk in past month	0.00	**0.76**	**1.00**	**1.00**
	0.00	*0.72*	*1.00*	*1.00*
Past month HED	0.02	0.29	**0.90**	**1.00**
	0.00	*0.27*	*0.89*	*1.00*
Peak BAC > 0.08	0.00	0.31	**0.96**	**1.00**
	0.00	*0.27*	*0.96*	*1.00*
Any drink Monday	0.01	0.00	0.00	**0.78**
	0.00	*0.00*	*0.01*	*0.79*
Any drink Tuesday	0.00	0.00	0.00	**0.53**
	0.00	*0.00*	*0.00*	*0.55*
Any drink Wednesday	0.00	0.00	0.14	**0.81**
	0.00	*0.00*	*0.14*	*0.82*
Any drink Thursday	0.00	0.09	**0.53**	**1.00**
	0.00	*0.09*	*0.52*	*1.00*
Any drink Friday	0.00	**0.87**	**1.00**	**1.00**
	0.00	*0.83*	*1.00*	*1.00*
Any drink Saturday	0.14	**0.85**	**1.00**	**1.00**
	0.00	*0.85*	*1.00*	*1.00*
Any drink Sunday	0.00	0.00	0.03	**0.71**
	0.00	*0.00*	*0.03*	*0.72*
Estimated Prevalence	18%	29%	48%	5%
	17%	*29%*	*50%*	*4%*

	Current Non-Drinkers[a]	**Weekend Non-Risky Drinkers**	**Weekend Risky Drinkers**	**Daily Drinkers**
Italy				
Any drink in past month	0.24	**0.94**	**1.00**	**0.97**
	0.18	*0.96*	*1.00*	*0.97*
Drunk in past month	0.00	0.05	**0.55**	0.41
	0.01	*0.05*	*0.55*	*0.41*
Past month HED	0.02	0.00	**0.58**	0.36
	0.04	*0.00*	*0.59*	*0.36*
Peak BAC > 0.08	0.00	0.16	**0.66**	0.51
	0.00	*0.17*	*0.66*	*0.51*
Any drink Monday	0.01	0.00	0.12	**1.00**
	0.02	*0.00*	*0.12*	*1.00*
Any drink Tuesday	0.00	0.00	0.14	**0.95**
	0.00	*0.00*	*0.14*	*0.97*
Any drink Wednesday	0.00	0.04	0.20	**0.98**
	0.00	*0.04*	*0.20*	*1.00*
Any drink Thursday	0.00	0.05	0.18	**1.00**
	0.00	*0.05*	*0.18*	*1.00*

Any drink Friday	0.00	0.31	**0.67**	**1.00**
	0.00	*0.32*	***0.66***	***1.00***
Any drink Saturday	0.14	**0.92**	**0.95**	**1.00**
	0.32	***0.91***	***0.95***	***1.00***
Any drink Sunday	0.00	0.47	**0.53**	**0.97**
	0.00	*0.49*	***0.53***	***0.97***
Estimated Prevalence	12%	57%	22%	9%
	13%	*56%*	*22%*	*9%*

Note: Entries in bold font indicate class-defining probabilities (>0.50). HED = heavy episodic drinking; BAC = blood alcohol content; Estimated Prevalence refers to model-based estimate of latent class prevalence rates.

[a] Probabilities for the Current Non-Drinkers class were constrained to be equal across the two countries. Item response probabilities of the models that include age as covariate are displayed in *italics*.

Table S4. Associations between latent class membership, gender and age of alcohol onset.

	USA		ITA	
	Weekend Risky Drinkers OR (95% CI)**	Daily Drinkers OR (95% CI)**	Weekend Risky Drinkers OR (95% CI)**	Daily Drinkers OR (95% CI)**
Gender (Male)	1.10 (0.60, 2.01)	**6.30 (1.44, 27.60)**	**0.46 (0.25, 0.85)**	1.89 (0.94, 3.80)
Age of alcohol onset	**0.58 (0.43, 0.78)**	**0.38 (0.25, 0.56)**	**0.76 (0.64, 0.90)**	**0.80 (0.67, 0.95)**

Note. All comparisons are with reference class Weekend non-Risky Drinkers. Bold indicates statistical significance.

∗∗Odds ratios with 95% confidence limits that do not include 1 can be considered to reflect a significant group difference.

Table S5. Additional illustrative quotations by country and theme.

Subthemes	Quotations

Experiences of socialization into alcohol

First contact with alcohol

U.S.A

"I grew up with both my parents having a glass of wine or beer at dinner, so it's not a specific event, it's just a very common thing." (FG2, female)

"I just remember a Sunday family gathering. All of my extended family would drink excessively, and my parents were like the only ones that were sober (laughing). [...] I was four or five." (FG5, male)

"My dad would always have a different type of beer when we went to a family meeting. And he always let me sip, let me try, just to see if I'd like it or not when I'd go to any party later. [...]. I was like middle school." (FG6, female)

"I was like 5 years old, and it was a birthday party [...] I remember running up to my dad and he kind of gave me a little sip, but that was it." (FG6, female)

"Four or five years old, I do recall parents or at least my dad's associates consuming, what I guess, what I'm assuming, from memory, is beer and being instructed specifically not to drink it." (FG7, undisclosed gender)

"At Christmas, when I was younger [eight], my parents would just like give me a little bit of wine just to celebrate but nothing like too much I guess." (FG8, male)

* *"My mom [...] had a history of alcoholism, so my whole life was like' no alcohol in the house, alcohol is a terrible bad thing, if you drink alcohol you get you are gonna be like an alcoholic'." (FG1, female)*

* *"When I was nine, I started seeing my dad drinking and he is kind of an alcoholic [...]. I would see him getting drunk and he would [...] become a dick, like make fun of you." (FG2, female)*

Italy

"I was told that my dad used to dip my pacifier into sparkling wine." (FG1, female)

"My grandfather would always have a glass of wine [during meals] [...] and he would let me have a sip of it. I was seven." (FG2, female)

"I started to taste beer, better froth, at a very young age [ten] to get used to the taste, and then I gradually tried actual beer. [...] It was with my dad." (FG5, male)

"I would always have a sip of sparkling wine at family events. I never liked it and I don't drink now, though my first experiences were with my family members, my parents. [...] Safe situations you could say". (FG6, male)

** "In my family alcohol was considered taboo for children, and I hardly had any experience of it at that age" (FG1, female)

** "First time I ever tried alcohol it was during high school. I went out with some friends and had a drink. My family did not want me to drink alcohol at all." (FG7, female)

First actual alcohol use episode	**U.S.A.** *"I had my first sips at 15 (laughing). [...] I snuck some of one of my older cousin's bottles because I was curious."* (FG1, female) *"I was 16 and I was an exchange student in Thailand [...] I was surrounded by all these other students from France and Germany (laughing) and Norway and Mexico and they all they've been drinking alcohol for years."* (FG1, female) *"I grew up in a very Christian household and so [...]. I had positive and negative experiences with it, but I prefer not to drink until I'm 21."* (FG2, female) *"My friend, I don't know how she got it, but she got a bottle of like a premixed drink of liquor. [...] I don't know how, where it came from, hopefully she didn't steal it."* (FG4, female) *"I have family in Mexico. [...] we were at a wedding [...] me and my cousin, were like, there were free drinks [...]. It was my first time drinking: so he would order shots of Tequila and we would take shots, after shots, after shots, and then I turned out to be drunk!"* (FG6, female) *"My first time it was a birthday party of one of my friends, at her house, and I think I was in eighth grade: it was after the parents went to bed and all the older siblings went to bed and it was me and four of my best friends. And we waited for everybody to be asleep and she was like "wait for my parents to go to bed so I can bring out the good stuff" [...]. I'd had never drink at all, until up to that point."* (FG6, female)

"The first weekend here in college was like a week of welcome event or something, and a bunch of my friends, we all got invited to a house party. [...] Having never drank in high school I was like: 'alright, I'm just gonna go hard on this'. Way too much. Way too much too fast. [...] Afterwards there is a no memories part." (FG7, male)

"It was junior year or sophomore year in high school. [...] and one of my friends had like a party bus and a couple of water bottles full of vodka and, umm, I got really drunk." (FG8, male)

"It was the summer before high school and my friend stole some alcohol she was going to make us mixed drinks and I've never had them before and I was kinda peer pressured into it. She mixed, ugh, concentrated orange juice and fireball together, and I threw up immediately afterwards because it was really sour, that was my first time ever with alcohol." (FG8, male)

Italy

"First time I drank, I mean I had already tried a few sips with my parents, it was in a bar when I was 14. I drank a Cuba libre." (FG1, female)

"I think the first time I was 17 and I was having pizza at a restaurant with my friends. I ordered beer with my pizza." (FG2, female)

"First time I drank I was in high school. I went to a club with friends and I got a cocktail there." (FG3, male)

"I was at a New Year's Eve party with some friends. I was 15 or something. I had never drunk before but everyone there was drinking. I was curious and wanted to try. I kept on drinking liquors like Vodka lemon, and ended up getting drunk." (FG4, female)

"I was 13 maybe. It was when I started going out, I mean even just going to friends' houses. And you start tasting stuff [...] at first light drinks, then later, at 15 years, I had my first mixed drink." (FG5, male)

"First time I drank was the first time I got drunk." (FG6, male)

"I was in middle school [...] went out with some friends and drank a shot of liquor in a bar. That was my very first time." (FG6, male)

"Except tasting wine at home with my parents, first time I drank has been on a church summer camp. I was 14 or 15. Camp leaders brought alcohol and we drank with them [...]. That was the first time I drank with friends, and not during a family meal. [...] First time I got drunk followed close. I was still 15, but it was in a club. I have memory gaps about that night." (FG7, female)

Representations of alcoholic beverages and their relation with food

U.S.A.

"I definitely see it more like a drug type thing: the personality altering and the lack of judgment skill and stuff that you get from it." (FG2, female)

"In a family setting, sometimes my father and I will have like wine with dinner. We drink it for the taste [...], but then when I'm in this setting, in college, then I'm drinking to get drunk, so I think it depends on the time and like the kind of drink it is." (FG7, male)

*"In expensive restaurants [alcohol] is something you enjoy with your meal [...]. I feel if you're gonna go out and get smashed, you know what's gonna happen, you know the effects of it, you view it as a drug [...] it's more just something you know, to get you f****d up."* (FG7, male)

Participant 1: "Depending on how you use it, [alcohol] is like with recreational drugs, like smoking marijuana: you do it to get high whereas alcohol you drink it to get drunk". Participant 2: "or you can drink it just to have like a drink and it taste good". Participant 3: " I perceive it as a drug even before the dependency factor [...] for me is that you can become addicted to it." (FG8, male)

Italy

Participant 1: "I associate wine with having a meal and conviviality, to spend time with others and not to drinking to excess. [...] Wine goes well with food, whereas hard liquors are for nights out". Participant 2: "Two good examples are: drinking wine at dinner with your parents or the classic pizza and beer match, and on the other hand having a mixed drink in a club. [...] Hard liquors are way stronger and are used in settings where drinking to excess is ok, like in a club" (FG2, female)

"While you are eating, you can definitely drink wine, for example, when you eat red meat. If we are not talking about wine [...] then it's just drinking to drink, there's no link with having a meal, but it's purely to have fun." (FG4, female)

"When you are out with your friends, you usually drink hard liquors. Like, for example, in a club or at a party. Whereas over dinner you usually have beer and pizza, or some wine, and this happens when you are with friends or with your family. It's the same thing." (FG4, female)

"You drink good wine for the taste, because it's good and goes perfectly with some foods. Yes, you may get a bit tipsy, but it's different from when you go out with friends at night. There you have mixed drinks or shots. These are not very good, though they help you to have fun." (FG7, female)

Comments on the LCA typology of drinkers

Comments on typology overall	**U.S.A.** *"I would say type two (WNRD) and type three WRD kind of resonate me. [...] There's probably a lot of current non-drinkers like for example I am, and like a lot of people I know are also current non-drinkers [...] might go out to like ice-skating or bowling ore karaoke or movie night, they kind of do non-partying activities, meanwhile all three other types will most likely be going out to parties or the bar or doing something alcohol involved." (FG3, female)* *"I can say me and the group of friends I have, are like between type two and type three, depending on what weekend it is or if we are playing drinking games, or there's a birthday or we are just relaxing. [...] Whenever we are playing drinking games we all get really drunk fast! And most of us end up passing out, without being able to move, we just sleep there, or some of us just make it home. [...] It's mostly weekends because there's nothing else to do the next day."* (FG6, female) *"I would say the majority of my friends are like type 2 (WNRD), I guess. I only know a few alcoholics, but I don't really talk to them." (FG8, male)* **Italy** *"Current non-drinkers and both weekend drinker types exist. There are both types of people who drink on weekends only, one that does not get drunk and one who does. Also there are others whose drinking is not limited to weekends and they may exceed with drinking at times." (FG4, female)* *"I am a type 3 (WRD), but I don't drink heavily every single weekend. That wouldn't be too healthy."* (FG6, male)
Comments on DD type	**U.S.A.** *Daily drinkers [...] it's like possible that they would be like into the party scene, but also it makes me think that there's also an underlying issue as to why they're drinking so often, like mental health issues."* (FG3, female)

"I live in a very packed freshman dorm, and first semester there were about four people just on my floor who were daily drinkers, and they dropped out [...]. I feel like daily drinkers, to that point when they're exhibiting that high risk behavior, it's probably not very functional especially in terms of classes." (FG3, female)

"For college students, when I say they drink every day, it's drinking to get drunk every day, not like, casually drinking, as a social thing." (FG4, female)

"I think it has to do with the age, with being able to buy your own alcohol. For me, I'll buy a bottle of wine, and have a glass every once in a while, at night, but I couldn't do that before I was 21. Like if I wanted alcohol I would have to literally find someone who could buy it for me, or it would be at an event." (FG6, female)

"My thoughts on daily drinkers is my dad, uh, him and my step mom, they drink like a bottle of wine every day, but they're not drunk, they work, you know they're functional, they're still able to make food [...], but college kids, no. That's from what I've seen: the ones who drink every day, do get drunk, but I know some college students who will drink like one or two beers a day but not, you know, take part in risky behavior, uh but, I think the drunkenness outweighs the ones who don't get drunk who do get drunk every day." (FG7, male)

You're underage, you're doing it anyways, just get smashed. [...] Until you hit 21, because you can't purchase your own alcohol, you're reliant on a fraternity with people who can purchase alcohol providing it to you, so it's all in one place. [...] I'd say if you're taking the risk if you're underage, you take the risk, then you're just gonna drink a lot because you're already taking the risk." (FG7, male)

Italy

"I think that in the Italian culture, there is a 20% of young people who drink alcohol regularly while having a meal." (FG4, female)

"Type 4 (DD) makes me think about a person who lives by himself and as he gets home tired from work, has a beer, and that's it. No excessive drinking." (FG5, male)

Participant 1: "I know one guy who could be type 4 (DD), though it is different if you drink every day when you hang out with some friends, or you drink as you get in the morning." Participant 2: "Yeah, drinking to excess may happen once in a while, though if it is too frequent, that's a different story [...] That is a flag there is an underlying issue." (FG6, male)

"At my place, wine is not only for big celebrations, but it is something we drink every day." (FG7, female)

"I think my boyfriend is type 4 (DD). He always drinks his glass of wine at dinner, and only gets more on New Year's Eve, when he drinks two

glasses and some grappa." (FG7, female)

Note: Quotations include focus group number and participants' gender. * indicates quotes of participants reporting a family history of alcohol abuse. ** indicates deviant cases in the Italy sample of family negative attitudes towards alcohol use.