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Drinking Games among University Students in Five Countries: Participation Rates, Game Type, Contexts, and Motives to Play

1. Introduction

1.1 Alcohol use amongst university students

Alcohol use is normative in university student populations globally, with heavy episodic drinking frequently reported (Foster and Ferguson, 2013; Zamboanga et al. 2014; Fairlie et al. 2015; Moss et al. 2015; George et al. 2019). In the United States of America (USA) high rates of heavy episodic drinking amongst university students is common (Wolkowicz et al. 2019). Likewise, in the United Kingdom (UK) and mainland Europe increasing numbers of students are also drinking alcohol, with males (13%) and females (12%), reporting being intoxicated during the last 30 days (ESPAD, 2017). Increasing numbers of female undergraduates are drinking alcohol in North America and mainland Europe (Grucza et al. 2009; Sassi, 2015). Jayne et al. (2016) report that young people regard alcohol as crucial for a good night out and deliberately accelerate their 'pre-loading', by participating in drinking games (DGs).

1.2 Participation in Drinking Games (DGs)

Student participation in DGs in the USA has received greater research attention (Zamboanga et al. 2014, 2016), than in other countries with high alcohol consumption, such as the UK and mainland Europe (Moss et al. 2015; Davoren et al. 2016). Borsari et al. (2003) reported 63% of incoming first year students in the USA played DGs. Schumacher (2012) found that 93% of US university students played DGs and Read et al. (2010) reported this figure to be 91%. A recent survey by the American Addiction Centers (2019) found that 95% of the adult USA population had played DGs.

High alcohol consumption by students has been highlighted as a global health concern, with DGs often accompanying increased levels of alcohol consumption in Australia (George and Zamboanga 2018; George et al. 2019) and associated in the USA with negative consequences (Zamboanga et al. 2014, 2016). USA based research identifies that consumption games are associated with increased intoxication (Tomaso et al. 2016). In the UK, 54% of students had played the extreme social-media-based DG known as 'Neknomination' (Moss et al. 2015). Most research has been conducted with USA samples but less is known about DGs behaviours among other students, e.g., in Australia (George and Zamboanga, 2018). Given the concerns regarding increased episodic drinking and DGs associated behaviors by USA students, research into the behaviors of students in the UK and mainland Europe is warranted.

1.3 DGs behaviors

LaBrie et al. (2013) estimate that approximately 500 different DGs are played regularly. These cover a wide spectrum of activities and associated behaviors, from benign ice-breaking activities with sociable intentions, to others involving rapid and copious alcohol consumption. All DGs involve the performance of physical or cognitive tasks and are governed by specific rules (Zamboanga et al. 2013). DGs usually facilitate heavy alcohol consumption to make the player, or someone else, intoxicated (Borsari, 2004). Players are likely to view 'getting drunk' positively and DGs often trivialize the dangers of heavy episodic or binge drinking (Berridge et al. 2009).

Extreme consumption games, e.g., Neknominate, may carry significant risks due to the emphasis on rapid, high-volume consumption (Zamboanga et al. 2013). These DGs may also place players at risk of experiencing negative drink-related consequences (Alfonso and Deschenes, 2013). Some players may target other participants' behaviors to make them intoxicated (LaBrie et al. 2013). Playing DGs is one of several risky drinking

behaviors, including pre-gaming also known as pre-partying, pre-loading or pre-drinking (Brister et al. 2011; Foster and Ferguson, 2013; Zamboanga et al. 2014; O'Neil et al. 2016).

Historically, participation in DGs has been a male-dominated activity (Zamboanga et al. 2015) with female bystanders (Rhoads, 1995). Although males drink more alcohol during DGs (Johnson and Sheets, 2004), females drink more during DGs than in other drinking situations (Johnson et al. 1999). Studies suggest that males and females participate at equal rates in DGs (e.g., Pedersen and LaBrie, 2006; Grossbard et al. 2007) and both are at risk of experiencing alcohol related problems (Zamboanga et al. 2021). Conversely, Cameron et al. (2010) found higher rates of DGs involvement among males in the USA and Hone et al. (2013) identified males experiencing more alcohol related consequences. Research on the similarities and differences in male and female DGs behaviors is predominantly USA focused. There are few studies featuring UK and mainland European university students and their motivation for playing DGs is important.

1.4 DGs motives

Johnson and Sheets (2004) developed the motives for playing DGs (MPDG) measure and used this to categorize students' motives into eight main types. Zamboanga et al. (2017), extracted seven factors/motives from the MPDG measure: boredom, competition, conformity, enhancement/thrills, novelty, sexual pursuit and social lubrication. The original competition/thrills factor (Johnson and Sheets, 2004) was combined into a separate competition factor (Zamboanga et al. 2017).

Zamboanga et al. (2017) found that among young adults, the DGs motive of competition was positively associated with frequency of DGs participation. Enhancement/thrills and

sexual pursuit motives for playing DGs were positively associated with both frequency of participation and the number of drinks consumed. Some young people play DGs while pre-partying, to 'get the evening started' (Polizzotto et al. 2007), for social lubrication motives (e.g., 'to make it easier to talk to someone') (Zamboanga et al. 2017) and to celebrate 21st birthdays (Neighbors et al. 2014). Studies that specifically examined US college students' participation in drinking games while pregaming include Hummer et al. (2013) and Read et al. (2010).

Assessing motives that are unique to a specific drinking context (Zamboanga et al. 2017; 2018) is increasingly important. Research into the association of general drinking motives, measured using the Drinking Motives Questionnaire [DMQ]; (Cooper, 1994), and specific high-risk drinking behaviors, such as DGs with students (Sheehan et al. 2013), have identified links between general drinking motives (particularly social and enhancement drinking motives) and DGs behavior and consequences (Zamboanga et al. 2017).

1.5 DG consequences

Given the popularity of DGs among university students globally, their associations with rapid alcohol consumption, negative behaviors and consequences (Fairlie et al. 2015; Moss et al. 2015), investigations to gain an understanding why students play DGs are warranted (George et al. 2018). DGs participation among students is linked to excessive alcohol use and health risks, e.g., memory loss and injuries including accidents and falls (Zamboanga et al. 2014). DGs pose both short and long-term dangers to physical and mental health (Dumbili and Williams, 2017; Alcohol Change, 2020). Playing the DG Neknomination resulted in the deaths of five young males in the UK (Wilkinson and Soares, 2014). DGs can seriously speed up the rate of drinking, also making it more likely to over-pour and exceed the recommended drinking guidelines (NHS Alcohol Units, 2019).

This study will expand the overall knowledge concerning participation in DGs, types played, playing situations/contexts and the motives for participation, by Social Work students in universities in the USA, the UK and mainland Europe. The rationale for studying DGs amongst a sample of Social Work students is that they study for long hours on a professional programme, whilst completing frequently stressful placements. Therefore, whether the manner in which the students unwind from these pressures includes playing DGs, would be interesting to establish. The specific country sites studied are those with traditional heavy episodic drinking cultures amongst students and therefore of interest to identify if this translates into DGs participation.

1.6 Aims of the research

The aims of the research include:

1. To understand the participation in DGs and types played by Social Work university students in the USA, the UK and mainland Europe.
2. To critically investigate the situations/contexts where DGs are played.
3. To critically analyze these students' motives for participating in DGs.

2. Materials and Methods

2.1. Participants and design

The data sample is based on the results of an anonymous online questionnaire sent to Social Work students in Austria, Germany, the Netherlands, the UK, and the USA. The sample was chosen from universities where the UK university has Erasmus and staff/student mobility links. Undergraduate students were recruited from the home UK university, a university in Georgia in the USA, and Erasmus partner universities in Austria, Germany, and the Netherlands. Students were assessed in the Spring semester of 2020.

The online questionnaire was piloted with students at the UK home university and a subset of DGs questions was extrapolated from a larger questionnaire.

2.2. Measures

The survey was administered using Jisc software. Invitations to participate were emailed using a secure link. A briefing sheet was provided, and informed consent obtained before commencement. The questionnaire was in English. Before being administered, the questionnaire was approved by the UK University Ethical Research Committee. The questionnaire consisted of 17 questions, divided into two main sections. The first section comprised questions about demographic information including age, gender, and country of domicile. A second section included questions concerning participation in DGs, types played and reasons behind playing. It should be noted that the questionnaire was structured, with appropriate wording, to permit only participants who stated that they played DGs, to answer the questions related to DGs playing. Checks were also carried out on the data base to ensure that this was the case. Two questions, 'Do you drink alcohol' and 'Have you ever played a drinking game' asked for dichotomous, yes or no answers. The first question/outcome variable was termed lifetime drinking games participation.

Frequency of playing DGs, required a choice from three alternatives concerning periodicity of playing from 'weekly', through 'monthly', to 'less than monthly'. Participants were asked to rate the importance of five different reasons for playing DGs. For each reason three alternatives were provided from an ordinal ranking scale ranging from '1. not at all important', through '2. slightly important', to '3. very important'. An opportunity was also provided to give other reasons for playing DGs. Information concerning situations where DGs were played, and the types of games played, was obtained using MCQ questions

permitting multiple responses. In the types of DGs played question an 'other' category was provided, which then asked for the provision of further information.

2.3 Data analysis

The data set was analysed using IBM SPSS Version 26. Analysis was performed to determine descriptive statistical information including frequency distribution along with range, means etc. Comparative analysis, to determine similarities and differences, was carried out between the various groups, i.e., all subjects, gender, and country. Crosstabulations were produced and where appropriate, means were compared using the t-test. The data derived from the ratings questions was non-linear non-scalar data and therefore, was presented in the form of frequency distributions. Weighted Averages (WAs) were calculated for trend comparison purposes, and non-parametric statistical analysis was carried out using Mann-Whitney U Test and Kruskal-Wallis Tests, to determine variations in inter-group differences. For individual questions, cell sizes within some groups were found to be small. Since the reliability may be affected, and extrapolation to larger populations is problematic, small groups were aggregated and groups with cell sizes of <10 were eliminated from analysis. Non-parametric tests, which do not assume the normal distribution, were used because of small groups sizes.

3. Results

3.1 Participants

The sample comprised 306 participants with an age range of 18 to 29, the mean age being 22.6 years. The sample was predominantly female (72.2%). Participants were residents of five different countries. All were university students studying on Social Work degree programmes and all stated that they drank alcohol. This sample was a subset of an original sample of 337 participants, of which 90.8% were alcohol drinkers. Therefore, 29 (9.2%)

non-drinkers were excluded. Details of country of domicile and gender of participants is shown in Table 1.

Groups	Gender				Totals
	Female		Male		
	n	%	n	%	
All	221	72.2%	85	27.8%	306
Austria	52	66.7%	26	33.3%	78
Germany	41	56.9%	31	43.1%	72
Netherlands	32	80.0%	8	20.0%	40
UK	68	88.3%	9	11.7%	77
USA	28	71.8%	11	28.2%	39

Table 1. Country of Domicile and Gender of Participants

3.2 DGs participation

A high proportion of participants, 92.2%, stated that they had participated in DGs (see Table 2). This is based on the sample remaining after the non-drinkers were excluded. DGs participation rates for males (90.6%) were higher than those for females (88.2%). Participation rates were consistently high across country groups, ranging from 88.9% in Germany, to 96.2% in Austria. Statistically significant differences were found using t-test, in all groups ($p < 0.01$), for comparisons between those stating that they played and those who did not.

Groups	Totals	Responses			
		Yes		No	
		n	%	n	%
All	306	282	92.2%	24	7.8%
Females	221	208	88.2%	13	11.8%
Males	85	74	90.6%	11	9.4%
Austria	78	75	96.2%	3	3.8%
Germany	72	64	88.9%	8	11.1%
Netherlands	40	37	92.5%	3	7.5%
UK	77	71	92.2%	6	7.8%
USA	39	35	89.7%	4	10.3%

Significance values from t-test = <0.01 for all groups

Table 2. DGs Participation Rates

3.3 Frequency of playing DGs

Only small percentages of participants, 10% of UK and 8.7% of Netherlands students play DGs weekly (See Table 3). Over 70% of all participants, 72% of females and 64.5% of males, reported playing DGs on a less than monthly basis. 77.6% of the Austrian group played less than monthly. Statistically significant differences were found between categories of playing frequency for all groups, $p < 0.04$.

Groups	n	Responses					
		Weekly		Monthly		Less than Monthly	
		n	%	n	%	n	%
All	276	16	5.8%	66	23.9%	194	70.3%
Females	214	12	5.6%	48	22.4%	154	72.0%
Males	62	4	6.5%	18	29.0%	40	64.5%
Austria	107	2	0.9%	22	20.6%	83	77.6%
Germany	16	0	0.0%	8	50.0%	8	50.0%
Netherlands	46	4	8.7%	14	30.4%	28	60.9%
UK	96	10	10.4%	22	22.9%	64	66.7%
USA	8	0	0.0%	0	0.0%	8	100.0%

For responses within all groups $p = 0.04$ ∴ statistically significant $p < 0.05$.
 Results of M-W Test for inter-gender comparison $p = 0.294$ and for inter- country group comparison $p = 0.155$. Germany and USA cell sizes < 10 ∴ omitted from analysis.

Table 3. Frequency of Playing Drinking Games

3.4 Situations identified in which DGs are played

Participants identified birthday parties, social get-togethers and before going out, as contexts where they play DGs (see Table 4). In comparison with other countries a higher proportion of the Netherlands participants (37%), reported playing DGs before going out. A greater percentage of USA (44.4%) and UK (32.8%) participants reported playing DGs at social get togethers. No significant differences were found for inter-gender comparison, but there was a highly significant difference between country groups ($p = 0.006$) with a significant difference ($p = 0.013$) between Austria and the UK for playing at birthday parties.

Groups	Totals		Situations where you play drinking games							
			Social Get-Togethers		Before Going Out		Birthday Parties		Freshers' Week	
	n		n	%	n	%	n	%	n	%
All	353		103	29.2%	105	29.7%	108	30.0%	37	10.5%
Females	273		80	29.3%	83	30.4%	82	30.0%	28	10.3%
Males	80		23	28.8%	22	27.5%	26	32.5%	9	11.3%
Austria	144		39	27.1%	42	29.2%	50	34.7%	13	9.0%
Germany	24		7	29.2%	6	25.0%	7	29.2%	4	16.7%
Netherlands	54		13	24.1%	20	37.0%	18	33.3%	3	5.6%
UK	122		40	32.8%	35	28.7%	31	25.4%	16	13.1%
USA	9		4	44.4%	2	22.2%	2	22.2%	1	11.1%
Mann Whitney U Test results showing statistical significances for inter-group comparisons, (Significance: ** p < 0.01 and *p > 0.05)										
Comparison Groups		Social Get-Togethers		Before Going Out		Birthday Parties		Freshers' Week		
Inter-gender		0.338		0.218		0.810		0.334		
Inter-country		0.243		0.092		0.006**		0.454		
Austria - UK		0.887		0.648		0.113*		0.447		
N.B. Germany and USA omitted from N-Par analysis due to small cell size <10										

Table 4. Situations Where Drinking Games are Played.

3.5 Types of DGs played

Thirteen different DGs were identified. The most frequently stated DG was Beer Pong with 123 responses, 43.5% of the total. This was 26.9% higher in response rate to Kings, also known as Ring of Fire, which had 69 (24%) of all responses. Flip Cup, cited 25 times (8.8%), was the next most frequently played DG.

Beer Pong, Kings and Flip Cup were played by students from every country. Conversely, Never Have I Ever (Ich Hab Noch Nie), a Truth-or-Dare game, and the card game Bus Driver (Bussen) were played exclusively by Austrian students. Statistically significant differences were found showing greater frequency of playing Kings, Flip Cup and Never Have I Ever by Austrian and other groups (see Table 5). UK students reported playing nine different DGs and Austrian students identified eight. Beer Pong was reported by 60% of both the Netherlands and USA participants and by over 40% from the other countries.

Kings was identified by 40% of UK and 30% of Netherland's participants. Nekominate was cited only by UK and Austrian students. Significant differences were found for individual country group comparisons as shown in Table 5. Highly significant differences were found for inter-country comparison for Beer Pong, Bus Driver and Never Have I Ever ($p < 0.01$).

Types of Game	All		Females		Males		Austria		Germany		Netherland s		UK		USA	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Beer Pong	123	43.5%	95	44.4%	28	40.6%	47	40.2%	7	43.8%	22	59.5%	34	41.0%	3	60.0%
Kings (Ring of Fire)	68	24.0%	54	25.3%	12	20.3%	15	12.8%	1	6.3%	11	29.7%	15	39.8%	1	20.0%
Flip Cup	25	8.8%	17	7.9%	8	11.6%	11	9.4%	3	25.6%	4	10.8%	6	7.2%	1	20.0%
Bus Driver	18	6.4%	12	5.6%	6	8.7%	18	15.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Never Have I Ever	18	6.4%	15	7.0%	3	4.3%	18	15.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Card Games	8	2.8%	6	2.8%	2	2.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Piccolo	7	2.5%	6	2.8%	1	1.4%	4	3.4%	1	6.3%	0	0.0%	2	0.0%	0	0.0%
Flunky Ball	4	1.4%	3	1.4%	1	1.4%	0	0.0%	4	25.0%	0	0.0%	0	0.0%	0	0.0%
Nekominate	3	1.1%	1	0.5%	2	2.9%	1	0.8%	0	0.0%	0	0.0%	2	2.4%	0	0.0%
Phone Apps	3	1.1%	2	0.9%	1	1.4%	3	2.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Roulette	2	0.7%	1	0.5%	1	1.4%	0	0.0%	0	0.0%	0	0.0%	2	2.4%	0	0.0%
Power Hour	2	0.7%	1	0.5%	1	1.4%	0	0.0%	0	0.0%	0	0.0%	2	2.4%	0	0.0%
Dice	2	0.7%	2	0.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2.4%	0	0.0%

Mann Whitney U Test results showing statistical significances found for inter-group comparisons, (Significance: ** $p < 0.01$ and * $p < 0.05$)

Comparison Groups	Beer Pong	Kings	Flip Cup	Bus Driver	Never Have I Ever
Inter-Gender	0.835	0.367	0.655	0.810	0.091
Inter-Country	0.082	0.005**	0.593	0.003**	0.013*
Austria-UK		0.020*	0.004*	0.004**	
Germany -UK		0.000**			0.041*
Germany-Austria		0.029*	0.001**	0.001**	0.002**
Germany-Netherlands		0.011*		0.010*	
Netherlands -Austria					0.039*

Table 5. - Types of DGs played

3.6 Motives for playing DGs.

Table 6 shows the frequency distribution of the responses to the importance rating of five given reasons for playing DGs based on a scale where 1 is 'not at all important' and 3 is 'very important'.

Reason for Playing	Groups	n	Rating of Importance						Weighted Average
			1		2		3		
			Not at all important		Slightly important		Very important		
		n	%	n	%	n	%		
To get drunk	All	184	56	30.4%	67	36.4%	61	33.2%	2.03
	Females	143	45	31.5%	52	36.4%	43	30.1%	1.94
	Males	67	41	61.2%	11	16.4%	15	22.4%	1.61
	Austria	62	13	21.0%	30	48.4%	19	30.6%	2.10
	Germany	21	6	28.6%	4	19.0%	11	52.4%	2.14
	Netherlands	28	15	53.6%	11	39.3%	2	7.1%	1.54
	UK	55	11	20.0%	20	36.4%	24	43.6%	2.24
	USA	18	11	61.1%	2	11.1%	5	27.8%	1.67
To get someone else drunk	All	209	138	66.0%	53	25.4%	18	8.6%	1.43
	Females	154	106	68.8%	38	24.7%	10	6.5%	1.38
	Males	55	32	58.2%	15	27.3%	8	14.5%	1.56
	Austria	65	34	52.3%	26	40.0%	5	7.7%	1.55
	Germany	29	19	65.5%	2	6.9%	8	27.6%	1.62
	Netherlands	28	21	75.0%	4	14.3%	0	0.0%	1.04
	UK	60	40	66.7%	15	25.0%	5	8.3%	1.42
	USA	27	25	92.6%	2	7.4%	0	0.0%	1.07
To meet people	All	211	39	15.2%	79	37.4%	101	47.8%	2.02
	Females	151	23	15.1%	51	33.8%	77	51.1%	2.07
	Males	60	16	10.2%	21	35.0%	29	48.3%	1.87
	Austria	69	14	20.6%	25	36.5%	30	42.9%	2.04
	Germany	15	4	28.6%	5	32.9%	6	38.6%	2.00
	Netherlands	28	7	25.0%	9	32.1%	12	31.6%	2.00
	UK	60	10	16.6%	22	36.7%	28	46.7%	1.70
	USA	25	5	20.0%	10	40.0%	10	40.0%	1.88
To control others	All	236	228	96.6%	7	3.0%	1	0.4%	1.04
	Females	178	172	96.6%	6	3.4%	0	0.0%	1.03
	Males	58	56	96.6%	1	1.7%	1	1.7%	1.05
	Austria	72	68	94.4%	3	4.2%	1	1.4%	1.07
	Germany	39	39	100.0%	0	0.0%	0	0.0%	1.00
	Netherlands	29	27	93.1%	2	6.9%	0	0.0%	1.07
	UK	62	60	96.8%	2	3.2%	0	0.0%	1.03
	USA	34	34	100.0%	0	0.0%	0	0.0%	1.00
Peer pressure	All	205	168	82.0%	32	15.6%	5	2.4%	1.21
	Females	154	128	84.8%	24	15.9%	2	1.3%	1.21
	Males	51	40	78.4%	8	15.7%	3	5.9%	1.21
	Austria	65	48	73.8%	14	21.5%	3	4.6%	1.31
	Germany	27	22	81.5%	3	11.1%	2	7.4%	1.26
	Netherlands	28	19	65.5%	9	32.1%	0	0.0%	1.32
	UK	60	55	91.7%	5	8.3%	0	0.0%	1.08
	USA	25	24	96.0%	1	4.0%	0	0.0%	1.04

Kruskal-Wallis Test results showing statistical significance for inter-group comparisons.

(Significance: ** p < 0.01 and * p < 0.05)

Comparison Groups	To get drunk	To get someone else drunk	To meet people	To control others	Peer pressure
Females - Males	0.208	0.085	0.241	0.961	0.397
Austria - Netherlands	0.021*	0.032*	1.000	0.666	1.000
Austria - USA	0.483	0.003*	1.000	0.009**	0.014*
Netherlands - UK	0.002**	1.000	1.000	1.000	0.009*
Netherlands - Germany	0.022*	0.160	0.986	0.865	0.215
Netherlands - USA	0.572	0.215	0.778	0.958	0.010*
Austria - UK	0.338	0.134	0.698	0.962	0.008**

Table 6. Rating of Reasons for Playing Drinking Games

Table 6 shows the frequency distribution of responses of participants for each of the four motives. The most important reasons identified were 'to meet people' and 'to get drunk'. Indeed 47.8% of all participants stated that 'to meet people' was 'very important'. 'To get drunk' was cited by 33.3% of participants as 'very important'. WAs for these two reasons were 2.03 and 2.02 respectively. 'To control others' was found to be the most frequently stated 'not at all important' reason (96.6% of participants, WA=1.04). 'Peer pressure' and 'to get someone else drunk' were also viewed as 'not important' with low WA scores. 'Peer pressure' was stated as being 'not at all important' by 82% of participants, and 66% rated 'to get someone else drunk' in this category.

Although the frequency distributions of importance ratings were found to be similar across many of the groups, there were some specific inter-group differences. German and UK participants (WAs=2.24), along with Austria (WA=2.10), rated 'to get drunk' as more important than the other groups. The Austrian, German and Male groups, (WAs=1.62, 1.55 and 1.56 respectively) rated 'to get someone else drunk' as more important than other groups. Conversely 53.6% of the Netherlands participants rated 'to get drunk' as 'not at all important'. 'To get someone else drunk' was identified as 'not at all important' by over 60% of participants in each group. The highest frequency was for USA (92%) and Netherlands (75%) participants. All participants in the USA and German groups stated that 'to control others' was 'not at all important', as did over 90% in all other groups. 'Peer pressure' was viewed as 'not at all important' by over 90% of USA and UK participants, but only 65.5% of the Netherlands participants. Over 40% of all groups identified 'to meet people', as a 'very important' reason to play DGs.

Non-parametric analysis showed no significant differences for comparisons between male and female groups for any of the variables. However, there were significant differences for specific inter-country group comparisons. For the reason 'to get drunk' significant

differences ($p < 0.05$) were found for the Netherlands students compared with Austria, the UK and Germany. For the variable 'to get someone else drunk', significant differences ($p < 0.05$) were found for the USA compared with the UK, Germany, Austria and for the Netherlands-Austria comparison. Significant differences were found for comparisons between the USA and Austria and with the Netherlands for 'peer pressure'. This was also the case for UK students compared with Austria and the Netherlands.

3.7 Other motives for playing DGs

An opportunity was provided for free responses to give other reasons for playing DGs. There were 115 responses with nine different reasons cited. The most frequently stated reason, 60%, was 'to have fun'. 'With friends' was identified by 17.4%, 'as a group' by 7.8%, and as 'a social activity' by 5.2%. 'Creating a nice atmosphere', 'making things less awkward', to 'destress', 'like playing games' and 'to pass the time', were also stated.

4. Discussion

Of the participants 92.2% stated that they had played DGs, which matched or exceeded reported levels in the USA and the UK. The highest reported frequency of DGs playing was in Austria. High proportions of both genders in all the countries surveyed reported having played DGs; this correlates with Zamboanga et al's. (2014) narrative review. Females reported partaking in DGs at similar rates to males; this is consistent with the findings of Pedersen and LaBrie (2006); and Grossbard et al. (2007). A variety of types of DGs are played with the most frequently cited being Beer Pong, which was popular across all countries. Kings (Ring of Fire) and Flip Cup were also played universally.

DGs were most frequently played monthly with only a relatively small proportion of students saying that they played weekly. The context for students primarily playing DGs were social occasions including birthday parties and playing DGs before going out. This was reported as a weekly occurrence by students in the UK. Our findings identify social motives including 'to meet people', 'to get drunk' and to have 'fun' as being 'very important', and therefore validate the social lubrication motive proposed by Zamboanga et al. (2017). Playing DGs and using them as a means for facilitating social interaction, along with using DGs for pre-loading, encourages imbibing alcohol in greater quantities at a faster rate often leading to rapid intoxication. From health to social perspectives there may be both short and long-term detrimental consequences resulting from students' perceived harmlessness of playing DGs.

To our knowledge, this is the first study to evaluate DGs participation, types played, playing situations and the motives for participation, by Social Work students in universities in the USA, the UK and mainland Europe. This study has several limitations which highlight promising avenues for future research. The sample is representative of a specific type of student and of a particular age group and is consistent across countries. However, as with all sampling it is difficult to truly extrapolate the findings to the larger more generic population of global students. Although comparatively large, overall, there are relatively small numbers in some of the sample subgroups. Having established trends, it would be useful to sample more countries, greater numbers, using more specific in-depth questions.

Secondly, the competitive consumption, team based DGs participated in by the sample would merit further investigation. Apart from Alfonso and Deschenes (2013), few studies have specifically addressed the types of DGs related to alcohol use and consequences of playing DGs. Furthermore, studies (e.g., George & Zamboanga, 2018; George et al. 2018) analyzing the negative outcomes occurring from playing DGs among students

internationally have been sparse. Although in the larger study questions were asked concerning binge drinking and the health consequences of excessive drinking, these findings do not include this information. This is because the nature of the questions did not posit a direct link between playing DGs and negative health consequences.

Thirdly, UK research has highlighted the potential of online DGs trends (Moss et al. 2015). Students are now accustomed to accessing a range of information technologies. Our study validates Suffoletto et al. (2019) who propose that different combinations of SMS-delivered harm minimization strategies may be effective. Knowledge of DGs patterns and outcomes could be utilized by student support services to implement these strategies online or via SMS. For example, targeted intervention strategies could reduce participation in consumption DGs, consequently reducing negative outcomes. Our findings also suggest that these strategies could make a real impact on the culture of excessive drinking before going out, and on the motivation to simply get intoxicated, whilst not impinging on opportunities to socialise and have fun. Moreover, student support services could offer guidance to students who choose to play DGs, so that these students come out of their DGs experience unscathed.

Furthermore, in the UK the hazardous effects of alcohol use, are not generally taught as part of the core curriculum on Social Work programmes, and this needs to be addressed. Lastly, the wider cultural and social imperatives shaping participation in DGs, including pre-partying, the role of regulation/advertising in shaping youth cultures, and the pleasures associated with being a student, including having fun and drinking alcohol could be further acknowledged and investigated.

5. Conclusions

The study provides an insight into participation in DGs. DGs are being played by a high proportion of students. Students state motives for playing DGs are ostensibly for benign reasons, however there may be hidden dangers lurking behind the fun. This may be an illusion of over self-confidence or a denial of the true beliefs. Nevertheless, issues have emerged showing participation in DGs is widespread internationally and problematic drinking is linked to this. This highlights a need for further harm minimization/public health interventions globally. The pre-partying involved in DGs underscore important targets in alcohol interventions. Harm minimization messages regarding safer drinking need to recognize that younger students often feel they are invincible, and they do not fully appreciate the risks and adverse effects of DGs; they simply drink to have fun and be sociable. Attempts to convince students of their vulnerability, like any attempt to eliminate their risk-taking behaviors entirely, are unlikely to succeed. However, our findings suggest that students are likely to respond to positive influences that are delivered in an appropriate manner.

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