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Addictive Behaviors

Short Communication

Social anxiety and drinking game behaviors among Australian university students

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HIGHLIGHTS

- Little is known regarding the role of social anxiety (SA) with drinking game behaviors.
- SA was not associated with drinking game consumption levels.
- SA was positively related with drinking game consequences.
- An indirect effect of SA on gaming consequences via conformity motives was identified.

ARTICLE INFO

ABSTRACT

Introduction: The relationship of social anxiety with alcohol use/problems has been examined among college student samples, but the relevance of findings to drinking game (DG) consumption/gaming consequences is not well understood due to a paucity of research.

Methods: A cross-sectional sample of 224 Australian university students aged 18–25 years (M_{age} = 20.7 years; 63% female) was utilized for analysis. Participants completed an online questionnaire which included measures of social anxiety, DG consumption, DG consequences, and motives for playing drinking games.

Results: Social anxiety was positively associated with DG consequences, but not DG consumption. However, after controlling for DG motives, social anxiety was no longer associated with DG consequences. Rather, an indirect effect of social anxiety on DG consequences via conformity DG motives was identified.

Conclusions: Our findings highlight the vulnerability of socially anxious students to experiencing greater drinking game consequences, but the importance of considering motives specific to playing DGs when examining these relationships.

1. Introduction

Heavy episodic drinking and drinking game (DG[1]) participation are prevalent among Australian university students (Polizzotto, Saw, Tjhung, Chua, & Stockwell, 2007), consistent with other studies in parts of the world (Dumbili & Williams, 2017; Moss et al., 2015; Zamboanga et al., 2014), and are associated with negative consequences (Zamboanga et al., 2017). Students with elevated social anxiety (SA[2]) are especially vulnerable to these negative outcomes, since they are at heightened risk for alcohol dependence and drinking-related problems

(Buckner et al., 2008; Schry & White, 2013). Individuals with Social Anxiety Disorder (SAD[2]) may have difficulty in social situations due to fear of scrutiny when performing behaviors (e.g., talking, making eye contact with others; Steinert, Hofmann, Leichsenring, & Kruse, 2013). Theoretically, it may be that those with greater SA use alcohol to cope with these symptoms, consistent with the self-medication hypothesis (Khantzian, 1997). However, the relationship of SA and alcohol use/ problems is mixed and therefore serves as the impetus for the current study.

A meta-analysis by Schry and White (2013) identified a positive

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relationship of SA, most commonly assessed via the Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998) with alcohol-related problems, but a negative relationship of SA with alcohol use. Perhaps a fear of negative evaluation by those with SA leads to avoidance of the "cognitive and behavioral impairment caused by alcohol use" (Meade Eggleston, Woolaway-Bickel, & Schmidt, 2004, p.45) and thus, lower overall alcohol consumption/frequency. Despite the popularity of DGs among university students (Zamboanga et al., 2014) and a study reporting close to 10% of students as having "marked-to-severe SA" (Russell & Shaw, 2009), it is unclear if the pattern of SA with alcohol use/problems extends to DG behaviors.

Theoretically, individuals with SA may be drawn to DGs. Individuals with SA are known to avoid social situations (Ham & Hope, 2006; Schry & White, 2013) and thus, could find the structured nature of DGs appealing to protect against social discomfort (Kilmer, Cronce, & Logan, 2014; Mulligan, George, & Brown, 2016). However, Mulligan et al. (2016) found no overall relationship of SA with frequency of DG participation in a sample of Australian university students. Johnson, Wendel, and Hamilton (1998) also found that greater DG frequency was associated with lower SA. Yet, Kenney, Napper, and LaBrie (2014) identified that playing DGs was associated with increased alcohol problems for students with high SA (not low SA). Because the latter study focused on general alcohol-related problems, it is unclear whether this relationship extends to DG-specific consequences.

It is important to consider cognitive influences on the association of SA with DG behaviors. Two studies examined the moderating influence of alcohol expectancies. Ham, Zamboanga, Olthuis, Casner, and Bui (2010) found that those high on SA reported greater DG frequency if drinking expecting tension-reduction and lower DG frequency if expecting liquid courage. However, Johnson et al. (1998) found no moderating effect of SA with tension-reduction or social lubrication expectancies. Perhaps consideration of drinking motives, which have been theorized to be the "final pathway" to drinking behaviors (Kuntsche, Knibbe, Gmel, & Engels, 2005) would be a more proximal cognitive influence.

To our knowledge, only one study has examined SA, drinking motives, and DG behaviors. Mulligan et al. (2016) found that those with SA who drank to cope played DGs more frequently. However, this study did not consider DG consequences and assessed general drinking motives (Cooper, 1994). However, research suggests that it is important to consider drinking motives specific to a context (e.g., DGs or preloading; LaBrie, Ehret, & Hummer, 2013; Zamboanga et al., 2017). Examining motives specific to DGs is an important first step in understanding the *mechanism* underlying the association between SA and DG behaviors. Among the motives for playing DGs, social lubrication is particularly relevant, since DGs are a social drinking activity (Zamboanga et al., 2013). Additionally, those high on SA might fear situations requiring social interaction with people they do not know (American Psychiatric Association, 2013). As such, it is important to consider a potential indirect effect of SA to DG consequences via social lubrication. Conceptually, although coping DG motives would also seem important, given past research (Mulligan et al., 2016), coping has failed to emerge as a DG motive, perhaps due to the social nature of DGs (Zamboanga et al., 2017). Conformity is the other DG motive that is conceptually relevant to SA. Fear of negative evaluation has been associated with alcohol problems via conformity motives (Lewis, Morris, Melling, & Komar, 2006), although Mulligan et al. found that conformity did not moderate the association of SA with DG frequency. However, no study has considered conformity motives specific to DGs. Given the prevalence of DGs within the university environment, students with SA may drink to conform with their peers, and this might also explain the SA-alcohol problems relationship.

1.1. Current study

We examined the association of SA with DG behaviors and

addressed the aforementioned gaps in the literature by considering motives specific to playing DGs when examining these relationships. We focused on social lubrication and conformity motives given their theoretical relevance to SA. Based on prior research regarding general alcohol problems, we anticipated that SA would be positively associated with DG consequences (controlling for age, gender, and general alcohol consumption), but that SA would be unrelated to DG consumption. Secondly, we expected that SA would have an indirect effect on DG consequences via social lubrication and conformity motives.

2. Method

2.1. Participants and procedures

Of the 295 university students who responded to an online survey available to those who had consumed alcohol in the prior year, 224 were aged 18–25 years, had ever played a DG, and were utilized for the current analysis (M_{age} = 20.67, SD = 1.91; 63% female). Of these, 180 (69%) had played a DG in the prior 6 months, and were included in the analysis for DG consequences. Missing data was dealt with in a listwise manner. See George and Zamboanga (2018) for further details regarding recruitment and methodology. Ethics approval was obtained from the University Human Research Ethics Committee.

2.2. Measures

Participants completed a set of questionnaires including the following measures (see Table 1 for Cronbach Alpha coefficients).

2.2.1. Social interaction anxiety scale (SIAS; Mattick & Clarke, 1998)

The SIAS is the most commonly used scale to assess social anxiety among the body of research that focuses upon college students and alcohol use (Schry & White, 2013), and has 19-items (e.g., "*When mixing socially, I am uncomfortable*") measured on a 5-point scale (0 = "*not at all characteristic or true of me*" to 4 = "*extremely characteristic and true of me*").

Table 1
Descriptive statistics of major study variables.

Variable	n	M	SD	α	Range Potential	Range Actual	Skew
SIAS	222	23.82	12.09	0.91	0–76	2–55	0.40
DG consumption	217	6.18	3.70	–	–	1–20	1.48
DG consequences	172	6.70	4.83	0.87	0–24	0–24	0.99
AUDIT-C	213	5.28	2.40	0.62	0–12	0–12	0.09
MPDG subscales[a]							
Social lubrication	224	8.58	2.71	0.74	4–16	4–15	0.04
Conformity	224	6.88	2.87	0.85	4–16	4–16	1.04
Boredom	223	4.84	1.76	0.62	3–12	3–10	0.81
Novelty	224	4.42	1.64	0.72	2–8	2–8	0.23
Enhancement/ thrills	223	18.28	4.89	0.85	7–28	7–28	− 0.05
Sexual pursuit	224	5.00	1.70	0.79	4–16	4–12	1.83
Competition	224	3.79	1.83	0.83	2–8	2–8	0.67

Note. SIAS = Social Interaction Anxiety Scale. DG = drinking game. DG consumption = number of standard drinks typically consumed when playing a drinking game. DG consequences = number of gaming specific consequences experienced in the prior 6 months. AUDIT-C = Alcohol Use Disorders Identification Test Consumption subscale score. MPDG = Motives for Playing Drinking Games. The variation in sample size is due to missing data for the variable and the DG consequences variable being applicable only for those who had played a drinking game in the prior 6 months.

[a] MPDG subscales in the current study derived from Zamboanga et al. (2017) and modified via a confirmatory factor model (George et al., 2018).