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The direct and indirect effect of loneliness on the development of adolescent alcohol use in the United Kingdom

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ABSTRACT

Alcohol use among adolescents in the United Kingdom (UK) remains relatively high compared to those in other European countries. The present study sought to examine both the direct and indirect effect of loneliness on drinking behavior. Participants were school children (mean age 13.5 years at Time 1) participating in a Randomized Controlled Trial in the UK, who completed a battery of questionnaires examining alcohol-use indicators, loneliness, self-efficacy and sensation seeking at Time 1 and at +12 months. Loneliness at Time 1 had a substantive, though largely indirect (i.e., via self-efficacy and sensation seeking covariates), impact on alcohol-related harm at +12 months. Furthermore, Loneliness interacted with gender in the prediction of context of alcohol use, where being female and experiencing loneliness put an individual at a greater risk of unsupervised drinking. Females experiencing loneliness were also 2.9 times as likely to have had a drink in the past 30 days, and around 2.5 times as likely to have ever consumed a full drink, when compared to their male peers. The current results indicate that loneliness is an important but complex factor in adolescent drinking. There are important implications for the development of interventions to prevent underage drinking, not least that it is not appropriate to consider all underage drinkers as socially marginalised. However, for those that are, the self-medication hypothesis is potentially relevant through emotional self-efficacy.

1. Introduction

Alcohol consumption among adolescents in the United Kingdom (UK) remains high compared to other European States (e.g., Fuller & Hawkins, 2014; Hibell et al., 2012), although there are regional variations (e.g., McInnes & Blackwell, 2013). This is an important public health concern as excessive alcohol consumption in this developmental period is associated with a range of both short- and long-term negative outcomes (e.g., Bonomo, Bowes, Coffey, Carlin, & Patton, 2004; Ellickson, Ticker, & Klein, 2003). Within the UK itself, there has been a change in adolescent drinking behaviors in recent years such that, while the overall proportion of lifetime users (adolescents who have ever drank) continues to decline, those who report lifetime use of alcohol are exposed to high, and increasing amounts of alcohol-related harms (Healey, Rahman, Faizal, & Kinderman, 2014). In the context of changing alcohol use patterns among adolescents in the UK, the present study examines the degree to which one psychosocial variable, loneliness, predicts changes in alcohol use behaviors above and beyond socio-demographic variables over a key 12 month period.

1.1. Loneliness and alcohol behaviors in adolescence

Adolescence is a period of great change, and many psychiatric problems emerge during this period (Moksnes, Bradley-Eilertsen, & Lazarewicz, 2016). Adolescence is also the developmental period in which individuals spend increasingly more time with peers, and less time with parents. In this context, loneliness is broadly understood as the negative emotional response to a discrepancy between the desired and achieved quality of one's social network (Peplau & Perlman, 1982). Whilst feeling lonely can result from a lack of social interaction or social isolation, it can also occur within quite extensive social networks (e.g., Heinrich & Gullone, 2006). In addition, loneliness is not inextricably tied to social isolation, as some individuals may see no need for a social network (e.g., socially avoidant or disinterested) and are therefore not emotionally distressed by their isolation. Loneliness should therefore not be assumed where social isolation exists.

Across a range of populations and study types, conflicting evidence on the relationship between loneliness and alcohol consumption has been presented. Some correlational studies in College students

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(McBroom, Fife, & Nelson, 2008), and adolescents (Varga & Piko, 2015), have shown an inverse relationship between loneliness and alcohol use; whereas others have provided a positive correlation between the two in adult (Bonin, McCreary, & Sadava, 2000), student (Cacioppo, Hawkley, Crawford, et al., 2002), and adolescent (Barbosa Filho, Campos, & Lopes Ada, 2012; Carvalho, Barros, Lima, Santos, & Melo, 2011) populations.

Stickley, Koyanagi, Koposov, Schwab-Stone, and Ruchkin (2014) reported that feelings of loneliness were linked to adolescents' substance use (generally) among other risk taking behaviors, and suggested that this substance misuse may be to avoid feelings of loneliness. Several studies have shown, for example, that lonely adolescents are more likely to use alcohol, cigarettes and illicit drugs (Page, 1990; Page & Cole, 1991; Page, Dennis, Lindsay, & Merrill, 2011) possibly also as a form of self-medication in response to the emotional discomfort of loneliness. And in fact, the findings of Niño, Cai, and Ignatow (2016) suggested that some youth may engage in alcohol use independent of peer influence. Among adults, chronic loneliness has been found to be associated with avoidant coping strategies, including drinking (Cacioppo et al., 2000; Gonzalez & Skewes, 2013; Hawkley & Cacioppo, 2010).

In contrast to the growing body of literature suggesting a positive relationship between loneliness and alcohol consumption, Pedersen and von Soest (2015) reported that alcohol use was positively associated with social integration, but negatively associated with loneliness. These authors concluded that socially integrated adolescents were more at risk of alcohol use behaviors than peers at the social margins. Similarly, in cross-sectional studies in Northern Ireland (NI), McKay et al. (McKay, Cole, Field, Goudie, & Sumnall, 2011; McKay, Sumnall, Percy, & Cole, 2012) reported that social-self-efficacy was positively related to alcohol use behaviors. Alcohol use is typically a social event, even in adolescence (Percy, Wilson, McCartan, & McCrystal, 2011), and this finding is in keeping with the theory that those with greater social competency will be more likely to involve themselves in social events or experiences. However, efficacy beliefs are best understood as domain-specific (e.g., Grau, Salanova, & Peiro, 2001; Muris, 2001) such that self-efficaciousness in one domain (e.g., academics) does not always translate to all domains of life (e.g., emotions); therefore, feelings of competence tied to task demands of a given situation have greater predictive utility than a global self-evaluation (Bandura, 1997). For example, the above-mentioned NI-specific studies also found that social self-efficacy positively predicted alcohol use, academic self-efficacy negatively predicted it.

Summarising this literature, it is apparent that a range of factors influence the complex relationship between loneliness and alcohol use. These include cultural context, gender, age and the precise nature of the alcohol use measures under consideration. The present study utilised two available waves of data from a longitudinal study of adolescents from two different cultural contexts within the UK (NI and Scotland) to examine the relationship between self-reported loneliness and a range of alcohol use indicators. The study had two aims: Firstly, to examine how loneliness at Time 1 predicts lifetime and past 30 day use of alcohol as well as being an abstainer or (un-)supervised drinker at Time 2 (+12 months), and how loneliness interacts with sociodemographic measures and a combined classroom and parental alcohol prevention intervention in this relationship. Secondly, to examine how loneliness at Time 1 predicts alcohol harms, alcohol attitudes, and heavy episodic drinking at Time 2 (+12 months) and how this relationship is mediated by academic self-efficacy, social self-efficacy, emotional self-efficacy, and sensation seeking. Sensation seeking data were gathered as part of the research described below, and we felt justified including it as a potential mediator given the extensive literature linking it with alcohol use behaviors (e.g., Doumas, Miller, & Esp, 2017; Hittner & Swickert, 2006; Stephenson, Hoyle, Palmgreen, & Slater, 2003).

2. Methods

2.1. Participants

Participants were a proportion of those in a cluster Randomized Controlled Trial examining the efficacy of a combined classroom and parental alcohol prevention intervention in both Scotland and NI (Sumnall et al., 2017). Scottish participants were from urban schools in Glasgow City and Inverclyde (an urban center to the west of Glasgow), while NI participants were from a mixture of schools in rural and urban settings. Data were opportunistically collected at two time points in that Trial (participants were in school Grade 9 [aged 13–14 years], hereafter T1), and at +12 months (hereafter T2). By T2 those participants randomized into the intervention group had received all intervention components. Loneliness was not a specific Trial outcome, nor was it a covariate in Trial analyses. Sample 1 consisted of 966 adolescents (42.67% females, 1.7% unreported) attending secondary schools in NI. Sample 2 consisted of 829 adolescents (54.52% females, 1.4% unreported) attending secondary schools in Scotland. Both groups of adolescents completed the same questionnaires.

2.2. Measures

Loneliness was measured using the revised three-item UCLA Loneliness Scale (Hughes, Waite, Hawkley, & Cacioppo, 2004), "How often do you feel that you lack companionship?", "How often do you feel left out?", and "How often do you feel isolated from others?" The full UCLA Scale consists of 20 items; however, a previous study has shown that a short form of the scale has adequate validity for inclusion in large-scale studies (Hughes et al., 2004). The items were rated "hardly ever" (0), "some of the time" (1), or "often" (2). We summed the items to produce a total loneliness score (α current study = 0.79).

In terms of alcohol-use measures, we examined five in total. (1) Context of alcohol use was assessed based on the binary responses (yes/no) to six questions. Participants were asked if they had ever consumed alcohol: with their family at a special occasion; with their family on holiday; at a party under adult supervision; with small groups of friends with no adults present; at parties with no adults present; or alone. Accordingly, participants were categorized as an abstainer, a supervised (by adults) only drinker, or an unsupervised drinker (on one or more occasion). (2) Lifetime use, and past 30 day use of a full drink (not just a sip or taste) were assessed by means of two questions, "Have you ever (in the past 30 days) consumed a full drink, not just a sip or a taste (yes/no)?" (3) Heavy episodic drinking (HED) was assessed by asking, "How often in the past 30 days have you consumed five or more full drinks of alcohol on the one drinking occasion?" Responses ranged from "never", through "12 or more times". (4) Harms associated with own use of alcohol were measured using a 16-item scale (internal consistency α = 0.9; McBride, Midford, Farringdon, & Phillips, 2000). Following concern from many of the schools, two of the questions used in this scale were eliminated: "How often during the past year did you have sexual intercourse that you later regretted?" and "How often during the past year did you have sexual intercourse that you were afraid would lead to pregnancy or sexually transmitted diseases?" Moreover, one question was added: "How often during the past year did you have to attend a doctor or hospital with a condition relating to alcohol misuse?" This was included to assess the relationship between alcohol use and medical attention or support in this population. (5) Attitudes towards alcohol were assessed using a six-item scale (internal consistency α = 0.64; McBride et al., 2000). Responses were on a 5-point Likert type scale, with a higher score indicative of less healthy or safe attitudes towards alcohol.

The Self-Efficacy Questionnaire for Children (SEQ-C; Muris, 2001) contains 21 items assessing three domains of self-efficacy: (a) academic self-efficacy (e.g., "*How well do you succeed in passing all subjects?*", α current study = 0.86), (b) emotional self-efficacy (e.g., "*How well can*