Short Communication

Effects of parental monitoring on alcohol use in the US and Sweden: A brief report☆

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HIGHLIGHTS

- Parental monitoring is related to lower alcohol use in adolescents.
- Country may moderate parental monitoring, so we compared parental monitoring's relation to alcohol use in the US/Sweden.
- Main effects of country & PM, interaction between country & PM predicting drinks/week, & PM predicting problem alcohol use.

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ABSTRACT

Objective: Adolescent alcohol use predicts a myriad of negative mental and physical health outcomes including fatality (Midanik, 2004). Research in parental influence on alcohol consumption finds parental monitoring (PM), or knowing where/whom your child is with, is associated with lower levels of alcohol use in adolescents (e.g., Arria et al., 2008). As PM interventions have had only limited success (Koutakis, Stattin, & Kerr, 2008), investigating moderating factors of PM is of importance. Country may serve as one such moderator (Calafat, Garcia, Juan, Becoña, & Fernández-Hermida, 2014). Thus, the purpose of the present report is to assess the relationship between PM and alcohol use in the US and Sweden.
Method: High school seniors from the US ($n = 1181$, 42.3% Male) and Sweden ($n = 2171$, 44.1% Male) completed assessments of total drinks consumed in a typical week, problematic alcohol use, and perceived PM.
Results: Generalized linear mixed modeling (GLM, Cohen, Cohen, West, & Aiken, 2013; Hilbe, 2011) was used to examine whether country moderated the relationship between PM and alcohol use. Results revealed main effects of country and PM and a significant interaction between country and PM in predicting total drinks per week and PM in predicting problematic alcohol use ($p < 0.001$).
Conclusions: While PM is related to lower quantity of alcohol consumed and problematic alcohol use, greater PM appears to be more strongly related to fewer drinks per week and less problematic alcohol use in the US, as compared to Sweden.

1. Introduction

Early alcohol use is a robust predictor of physical/mental health outcomes in adolescents, including drug/alcohol dependence, depression, aggression, and victimization (e.g., McGue & Iacono, 2008; Midanik, 2004). Underage drinking is a leading causes of death among youth (National Center for Injury Prevention and Control, 2007), and directly responsible for higher rates of physical injury and high-risk sexual activity. Despite clear evidence that one aspect of parenting, parental monitoring (PM), is associated with lower levels of adolescent drinking (Arria et al., 2008; Beck, Boyle, & Boekeloo, 2004), prevention efforts that have targeted PM have had only limited success (e.g. Koutakis, Stattin, & Kerr, 2008). This highlights the importance of identifying dispositional factors that may strengthen the effect of parental monitoring on adolescent alcohol consumption. Parental styles across countries have been proposed as one such moderator (Calafat et al., 2014). Given that country of origin is not a malleable factor, it is important to understand if the efficacy of PM is affected by country. PM and alcohol

has been studied in several countries (e.g., Strunin et al., 2013), but rarely across countries. Thus, the current brief report provides a preliminary examination into the extent that country is associated with adolescent sensitivity to parental monitoring.

Substantial evidence suggests adolescent drinking practices differ across countries (Norström, 2002; Hibell et al., 2004; Rehm et al., 2003; Ahlstrom & Osterberg, 2004). Compared with American youth, European adolescents initiate drinking earlier and are half as likely to abstain from alcohol, than American adolescents (Jernigan, 2001; Johnston et al., 2005; Hvitfeldt, Andersson, & Hibell, 2004). According to the European School Survey Project on Alcohol and Other Drug Use (ESPAD) report, youth in Sweden reported drinking more than average amounts of alcohol when compared to other European countries (7.0 versus 5.1 cL). Given the central role culture plays in parenting and adolescent drinking, country may be critical in determining the association between PM and adolescent problem drinking. Research on parenting in the US and Sweden suggests differing parental styles. According to Sorbring and Gurdal (2011), in Sweden more equal responsibilities and opportunities are spread between children and parents. Thus, Swedish parents "negotiate" with their children. In contrast, in the US the hierarchy between individuals is highlighted. Thus, individuals are more competitive and power dynamic.

Dishon and McMahon (1998) proposed a triad of interrelated components of parenting that impact youth problem behavior: motivation, behavior management, and parental monitoring (PM), defined as "parenting behaviors involving attention to and tracking of the child's whereabouts, activities, and adaptations." Indeed, evidence suggests that PM has been protective for a range of adolescent risk behaviors (Lahey et al., 2008; Fletcher et al., 2004; Bohnert et al., 2012). Critically, two-decades of research have revealed that high levels of PM are consistently associated with lower levels of adolescent drinking and related consequences in the US (Arria et al., 2008; Beck et al., 2004; Barnes, Farrell, & Banerjee, 1994; Fors, Crepaz, & Hayes, 1999; Griffin, Botvin, Scheier, Diaz, & Miller, 2000; Branstetter and Furman, 2013), over and above peer influence (Steinberg, Fletcher, & Darling, 1994). However, it has been noted that many of the studies that purport to examine parental monitoring have been limited by only examining one component of this process, parental knowledge. This dimension of parental monitoring has come under criticism for being a more passive measure of child disclosure rather than active parental tracking and monitoring of youth behaviors (e.g. Kerr, Stattin, & Burk, 2010; Stattin & Kerr, 2000), highlighting the need to assess not only parental knowledge but also active limit-setting that accompanies it to fully measure active parental monitoring. Indeed, studies that have examined parental knowledge alone have found inconsistent results. While some research suggests that parental knowledge alone can be effective at buffering youth from drinking problems (Kerr et al., 2010), other research indicates that it may be an insufficient protective factor (e.g. for females, Barnes, Welte, Hoffman, & Dintcheff, 2005; Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003; Griffin et al., 2000). Thus, the present study incorporates rule setting with parental knowledge items in order to more closely approximate PM. These inconsistent results across studies suggest that PM, and factors determining adolescent sensitivity to PM, remain inadequately understood.

The present study fills this gap in the literature by examining whether country moderates the relation between PM, indicated by both parental knowledge and rule-setting, and adolescent problem drinking in two large community-based samples of high school seniors living in the US and in Sweden. Based on prior research in the US (Aria et al., 2008) and Sweden (Bergh, Hagquist, & Starrin, 2010), we hypothesized that higher levels of PM would be associated with lower levels of adolescent drinking in both cultures. However, we hypothesized that high levels of PM would have a stronger relation with low levels of drinking among US adolescents due to the relative authority of US parents and the lower overall adolescent drinking observed in the US compared with Sweden.

2. Materials and method

In brief, assenting 17 year-old and consenting 18 year-old high school seniors ($N = 3059$) from 22 high-schools across Washington State in the US and from 19 high schools in the Region of Skåne, Sweden were recruited to a 4-year study investigating a brief web-based intervention for alcohol use during adolescence and early adulthood (complete methods, Grazoli et al., 2015). Analyses were performed on baseline data collected from Washington ($n = 1181$, M age = 17.59, 70.5% Caucasian, 42.3% Male) and Swedish high school seniors ($n = 2171$, M age = 17.83, 72% Caucasian, 44.1% Male) before administration of the web-based intervention.

The assessment, completed online by US students and with paper-and-pencil in Sweden, included the measures of PM, quantity of drinking, and alcohol related problems.

Parental monitoring was assessed with a 6-item measure adapted from ESPAD (Hibell et al., 2004). Participants respond to items such as "My parent(s)/guardian(s) know whom I am with in the evenings." Two items assessed parental rule setting, and the remaining four items assessed PM of the adolescent's whereabouts including where they are and whom they are with. Items were rated on a Likert scale of 4 = "almost always," 3 = "often," 2 = "seldom," and 1 = "almost never" then summed to create a total PM index. These scores ranged from 12 to 36 with high scores signifying more perceived PM ($a = 0.77$).

Quantity of alcohol use was assessed via total drinks per week. Participants reported number of drinks consumed on every day in a "typical" week. Daily drinking was summed to compute total drinks consumed in a typical week.

Alcohol related problems were assessed via 18-item brief Young Adult Alcohol Problems Screening Test (YAAPST, Hurlbut and Sher, 1992). The YAAPST asks participants the frequency that alcohol related problems (e.g., hangover in the morning after drinking) have occurred over the past 3-months. Responses were transformed into binary "has happened/has not happened" responses and summed to create a total score indicating how many kinds of alcohol problems were experienced in the last 3 months. Higher scores represent a greater amount of alcohol related problems ($a = 0.84$).

2.1. Data analysis

Generalized linear mixed modeling (GLM, Cohen, Cohen, West, & Aiken, 2013; Hilbe, 2011) assessed the roles of country and PM with alcohol use and alcohol related problems. Mixed modeling accounted for the nesting of students within schools as a random effect because students were clustered within schools. Country's legal age of drinking and gender were controlled for in all analyses given that both could impact drinking rates. Finally, we used a GLM in order to accommodate the fact that drinking data among adolescents tends to be zero inflated (i.e., many adolescents do not drink). A negative binomial distribution with a log link function was used to accommodate the zero-inflated count data. Continuous predictors and covariates were mean centered. Descriptive statistics and correlation values for all variables are in Table 1.

3. Results

GLM results between country and PM and total drinks per week revealed a main effect of country ($\beta = 1.08$, $p < 0.001$) and PM ($\beta = -0.08$, $p < 0.001$) and a significant interaction of country and PM onto total drinks per week ($\beta = 0.06$, $p < 0.001$). Swedish participants reported the most total drinks per week and higher PM was related to fewer total drinks per week overall. However, higher PM was more strongly related to fewer drinks per week in the US than in Sweden. While associations were small, simple slope analysis indicated that the relation between PM and total drinks per week was significantly