

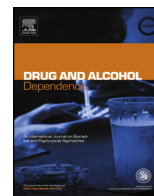


ELSEVIER

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcddep



Full length article

Correlates of use of alcohol mixed with energy drinks among youth across 10 US metropolitan areas

Shivani R. Khan*, Linda B. Cottler, Catherine W. Striley

Department of Epidemiology, College of Public Health and Health Professions & College of Medicine, University of Florida, 2004 Mowry Road, Gainesville, FL 32610, United States

ARTICLE INFO

Article history:

Received 31 August 2015
Received in revised form 18 April 2016
Accepted 25 April 2016
Available online xxx

Keywords:

Energy drinks
Alcohol
Adolescents
Correlates
Youth

ABSTRACT

Background: Predictors of use of alcohol mixed with energy drinks (AmED) among youth have been understudied. The current analyses investigated the prevalence of and correlates for use of AmED among alcohol users from a national study of stimulant use among youth.

Methods: The National Monitoring of Adolescent Prescription Stimulants Study (N-MAPSS) assessed behaviors and risk factors for stimulant use from 11,048 youth, 10–18 years of age recruited from entertainment venues across 10 US cities. Of the four cross sections, two had questions on having alcohol mixed with energy drinks (AmED) in the past 30 days along with sociodemographic characteristics, current tobacco and marijuana use and current nonmedical use of prescription opioids, anxiolytics, and stimulants. Only 13 to 18 year olds and those who reported alcohol use were included in the analyses.

Results: Overall, 28.4% (1392 out of 4905) of the 13 to 18 year olds reported past 30-day alcohol use. Among alcohol users, 27% reported having alcohol mixed with energy drinks in the past 30 days. Multivariate logistic regression indicated that use of AmED was significantly associated with tobacco and marijuana use and nonmedical use of prescription stimulants.

Conclusions: Underage drinking is common among youth and more than a quarter of these drinkers use AmED. Use of AmED is significantly associated with tobacco and marijuana use and nonmedical use of prescription stimulants. Drug and alcohol intervention programs should educate on the risks of AmED, as the same population is at high-risk for use of AmED and alcohol/drug use.

© 2016 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

Energy drinks are beverages containing high concentrations of caffeine and other additives such as taurine, carbohydrates, glucuronolactone, 1-carnitine, vitamins, guarana and ginseng (O'Brien et al., 2008; Ishak et al., 2012; Seifert et al., 2011). Energy drinks provide a boost in energy, promote wakefulness and enhance mental alertness and are mostly consumed by adolescents and young adults for these reasons (Seifert et al., 2011; Striley and Khan, 2014). However, due to the high caffeine content in these beverages, teens and young adults who are less tolerant to caffeine may have a greater risk of getting intoxicated (Goldman, 2013). Reports from the Drug Abuse Warning Network (DAWN) showed a two-fold increase in emergency department visits among youth from 2007 to 2011 due to energy drink use (SAMHSA, 2013). Energy drink use

has also been linked with heavy alcohol use and illicit drug use among college students (Arria et al., 2010).

In recent years, the popularity of consuming alcohol mixed with energy drinks (AmED) has raised concerns among public health officials. Studies have shown that 23% to 56% of college students reported use of AmED in the past 30 days (Malinauskas et al., 2007; O'Brien et al., 2008; Brache and Stockwell, 2011; Miller, 2012; Patrick et al., 2014) with males having higher odds of consuming AmED than females (O'Brien et al., 2008; Miller, 2012). More than half of the college students who used AmED reported it in the context of partying (Malinauskas et al., 2007) and reported increased heavy episodic drinking and weekly drunkenness compared to those using alcohol alone (O'Brien et al., 2008, 2013). Use of AmED is also associated with an increase in alcohol use disorders among users (Reissig et al., 2009).

A review of the current literature found consuming alcohol mixed with energy drinks to be more dangerous than consuming alcohol or energy drinks alone (Striley and Khan, 2014). In 2010, the US Food and Drug Administration (FDA) banned the sale of energy drinks premixed with alcohol. However, individuals still

* Corresponding author.

E-mail address: khanshr1@ufl.edu (S.R. Khan).

mix energy drinks with alcohol in venues such as bars, home and other venues (Snipes and Benotsch, 2013). In 2011, the US National Poison Data System reported that of all energy drink-related calls, the rate of adverse events from AmED was higher than energy drinks without alcohol (39.3% versus 15.2% respectively). Among AmED users who called, 68% were under 20 years of age; 77% were subsequently referred to a healthcare facility to seek immediate treatment (Seifert et al., 2013).

Moreover, among college students who consumed a similar amount of alcohol, those who mixed it with energy drinks felt less impaired than those who consumed alcohol alone (Marczynski et al., 2013). The use of AmED seems to mask the symptoms of intoxication and to increase alcohol consumption, which may lead to risky sexual activities and risky and illegal driving behavior (O'Brien et al., 2008; Miller, 2012; Eckschmidt et al., 2013; O'Brien et al., 2013).

Evidence for the increased risks of mixing alcohol and energy drinks compared to alcohol use alone is clear among college students between the ages of 18 and 24 (O'Brien et al., 2008; Eckschmidt et al., 2013; O'Brien et al., 2013). Few studies have been conducted among younger age groups. In one, a web-based survey among 13–20 year olds, 19.6% endorsed using premixed caffeinated alcoholic beverages or self-mixed alcohol and energy drinks in the past 30 days (Kponee et al., 2014). Those consuming these beverages, compared to those mixing alcohol with coffee, tea or soda, had higher odds of heavy episodic drinking, fighting and experiencing alcohol-related injuries (Kponee et al., 2014). In a study of 15–19 year olds, use of AmED was significantly associated with being male, having a higher number of sex partners, being a current smoker, riding with an intoxicated driver and using marijuana (Flotta et al., 2014). In another study, among 12th graders, Martz et al. (2015) found that 24.8% endorsed use of AmED in the past year and that use was associated with missing classes, evening outings for fun and recreation, binge drinking, marijuana use and illicit drug use. Martz et al. (2015) distinguished between AmED users and nonusers regardless of their alcohol use. While studies have shown a significant association between prescription drug use and energy drink use among college students (Miller, 2008; Arria et al., 2010; Hamilton et al., 2013; Woolsey et al., 2014), such an association has not been studied with use of AmED. Among Canadian high school students, age and sex were not associated with energy drink use in multivariate models, while being employed, having lower educational performance, tobacco, marijuana and prescription drug misuse, as well as binge drinking, high sensation seeking and having been injured were significantly associated (Hamilton et al., 2013; Ilie et al., 2015). Factors associated with energy drink and AmED use thus have been identified for this analysis from the empirical literature.

Other factors that may be associated with AmED use are theorized to be factors that are associated with other drug use. Sociodemographic variables such as rurality (Cronk and Sarvela, 1997), and family structure (Barrett and Turner, 2006) have been associated with using other substances. Testing their association with use of AmED may be valuable.

AmED use continues to be understudied among US adolescents. The field needs to explicate factors associated with the use of AmED based on prior findings for other drugs, ED alone, and AmED. Factors associated with alcohol use versus AmED use are also needed for increased specificity of association. We had the opportunity to: 1) examine the prevalence of current use of AmED and 2) identify the correlates of AmED among youth 13–18 years of age from 10 US metropolitan areas versus alcohol alone. Identifying the youth at highest risk for use of AmED may help target prevention efforts.

2. Methods

2.1. Sample

The National Monitoring of Adolescent Prescription Stimulants Study (N-MAPSS) recruited 11,048 youth 10–18 years of age from the 10 US cities (Boston, MA; New York, NY; Philadelphia, PA; Tampa, FL; Cincinnati, OH; Houston, Texas; St. Louis, MI; Denver, CO; Los Angeles, CA; and Seattle, WA) to investigate the prevalence of prescription stimulant use and misuse and associated risk behaviors. N-MAPSS used an entertainment-intercept venue method, recruiting from movie theatres, shopping malls, libraries, parks, sports and recreational centers, arcades and skate parks in prespecified zip codes in urban, suburban and rural areas. The sample in N-MAPSS was highly representative of 2010 US census when age, sex, race and rurality for each of the cities were compared. Surveys were completed by trained, certified interviewers in four cross sections: Fall, 2008, Spring, 2009, Fall, 2010 and Spring, 2011. The reliability of the assessment was found to be high (kappas = 0.6–1.0) in a test-retest study design (Cottler et al., 2013). The Washington University in St. Louis Institutional Review Board approved the study protocol and waived written informed consent. Further details on the study methodology have been published (Cottler et al., 2013).

For this analysis, data was taken from the last two cross sections (n = 5569), which included a question on mixing alcohol and energy drinks (described below). Youth who reported no alcohol use in the past 30 days were excluded. Only 17 youth aged 10–12 years of age reported alcohol use in the past 30 days; hence, 10–12 year olds were excluded from analyses. The total number of 13–18 year olds in the sample was 4905. Data for these analyses were limited to the 13–18 year olds who reported alcohol use in the past 30 days from the last two cross sections (n = 1392).

2.2. Measures

All data came from the self-reported booklet assessment used in N-MAPSS.

2.2.1. Alcohol use. To assess alcohol use, youth were asked, “In the last 30 days, on how many days did you drink alcohol?” Those who reported consuming alcohol on 1 or more days in the past 30 days were categorized as alcohol users and were included in the analyses.

2.2.2. AmED use. Youth who reported alcohol use in the past 30 days were asked, “Have you mixed alcohol and energy drinks together in the past 30 days?” Youth who responded “yes” were categorized as AmED users. Those who responded “no” were categorized as alcohol only users.

2.2.1. Sociodemographic characteristics. Sociodemographic variables included self-reported age, gender, race, area of residence, perceived average grades and living arrangement. Age was categorized into 13–14 year olds, 15–16 year olds, and 17–18 year olds. Race was divided into Caucasian, African American, Hispanic, Asian, and others (Alaskan Native, Asian American, Middle Eastern, Pacific Islander, Multiracial). Area of residence was categorized into urban, suburban, and rural by city limits, proximity to city limits and population density, using US census criteria. Self-reported average grades in school were dichotomized into As or Bs and Cs or lower. Living arrangement was categorized into three groups: living with both parents, living with either mom or dad, or living with foster parents, relatives or others.

Download English Version:

<https://daneshyari.com/en/article/7503945>

Download Persian Version:

<https://daneshyari.com/article/7503945>

[Daneshyari.com](https://daneshyari.com)