



Nonmedical use of prescription drugs and related negative sexual events: Prevalence estimates and correlates in college students



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HIGHLIGHTS

- Nonmedical use of three classes of prescription drugs was assessed in college students
- We assessed the relation between NMUPD and negative sexual events
- Anxiolytic/sedative use was positively associated with negative sexual events.

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ABSTRACT

The present study of college students investigated (a) the prevalence of nonmedical use of three classes of prescription drugs (stimulants, anxiolytics/sedatives, analgesics), (b) the prevalence of negative sexual events (NSE) associated with any nonmedical use of prescription drugs (NMUPD), and (c) a set of correlates of NSE. The specific NSE were sexual aggression victimization and perpetration, and regretted sex. The correlates of the NSE were sex, race/ethnicity, year in school, psychological symptoms, alcohol use, illegal drug use, and NMUPD. Participants were 509 (254 females, 255 males) randomly-selected college students who reported any NMUPD. The majority (76.2%) of the sample reported ever using stimulants, 38.9% reported ever using anxiolytics/sedatives, and 40.9% reported using analgesics. During NMUPD, 14.3% of the students reported regretted sex, 7.1% of female students reported sexual victimization, and 6.3% of male students reported perpetrating sexual aggression. Multiple logistic regression analyses indicated that anxiolytic/sedative use (Adj. OR = 1.99; 95% CI = 1.51–2.62) was positively associated with regretted sex, whereas anxiolytic/sedative use (Adj. OR = 1.79; 95% CI = 1.01–3.16) and psychological symptoms (Adj. OR = 1.06; 95% CI = 1.02–1.10) were positively associated with sexual victimization. Illegal drug use was positively associated with perpetrating sexual aggression (Adj. OR = 4.10; 95% CI = 1.21–13.86). These findings suggest that among these college students, NMUPD-associated NSE were not uncommon, and primarily associated with anxiolytic/sedative use. Given the academic, physical, and psychological implications associated with NSE, research needs to further explore the causal nature of these relations.

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1. Introduction

National statistics indicate that 79% of college students consume alcohol (Johnston, O'Malley, Bachman, Schulenberg, & Miech, 2015), with >60% engaging in heavy drinking during their first year at school (Hoeppner, Paskausky, Jackson, & Barnett, 2013). In addition,

Abbreviations: NMUPD, nonmedical use of prescription drugs; NSE, negative sexual events.

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prevalence estimates for marijuana use and nonmedical use of prescription drugs (NMUPD) range as high as 30% (Arria et al., 2008a; Garnier-Dykstra, Caldeira, Vincent, O'Grady, & Arria, 2012; McCabe, Cranford, Teter, Rabiner, & Boyd, 2012) on individual college campuses. NMUPD is defined as the use of a scheduled medication without a legal prescription, and is an increasing public health concern, particularly among emerging and young adults. Heavy drinking, as well as drug use (i.e., marijuana, NMUPD) have been associated with a number of negative psychological (e.g., mild distress - depression; Fielder, Walsh, Carey, & Carey, 2013; Lewis, Atkins, Blayney, Dent, & Kaysen, 2013), physical (e.g., sleep quality; Clegg-Kraynok, McBean, & Montgomery-

Downs, 2011), and academic (e.g., lower GPA; Baker et al., 2016) events for college students.

The majority of college students are sexually active (68.5%; American College Health Association, 2015). A number of studies have found a positive association between alcohol and other drug use and sexual activity among college students (Kiene, Barta, Tennen, & Armeli, 2009; Logan, Koo, Kilmer, Blayney, & Lewis, 2015; Snipes & Benotsch, 2013). Given the cognitive and physiological impairing effects of alcohol and other drugs, it is likely that a number of individuals who engage in sexual activity when high or intoxicated will experience a negative sexual event (NSE), such as sexual aggression (victimization or perpetration; i.e., sexual intercourse without consent when high/intoxicated); risky sexual behavior (e.g., multiple sex partners, unprotected sex); or regretted sex. In fact, a considerable body of research supports a positive relation between alcohol intoxication and NSE (e.g., risky sex, regretted sex, sexual aggression) among college students (Abbey, 2002; Caldeira et al., 2009; Neal & Fromme, 2007; Olmstead, Roberson, Pasley, & Fincham, 2015; Orchowski, Mastrole, & Borsari, 2012; Oswalt, Cameron, & Koob, 2005).

Further research has found a positive relation between illicit drug use and polysubstance use and NSE (i.e., risky sex, sexual aggression; Caldeira et al., 2009; Resnick, Walsh, Schumacher, Kilpatrick, & Acierno, 2013). Given the substantial prevalence estimates of NMUPD on college campuses (e.g., Arria et al., 2008a, 2008b; S.E. McCabe et al., 2012; McCabe, West, Teter, & Boyd, 2014), and the frequent polydrug use associated with NMUPD (McCabe, Cranford, Boyd, & Teter, 2007; Quintero, 2009a, 2009b), it is likely that students who engage in NMUPD also are experiencing NSE associated with their drug use. Because NMUPD-associated NSE have received little empirical attention, they are the focus of the present study. In addition, it will be important to determine the extent to which NMUPD is associated with NSE after controlling for alcohol consumption and other illicit drug use.

1.1. Nonmedical use of prescription drugs and negative sexual events

A substantial body of literature demonstrates the high prevalence of NSE, particularly experiences with sexual aggression, among college women (see Fisher, Daigle, & Cullen, 2010). Prevalence estimates for sexual aggression among women during their time at college have been reported between 20% and 50% (Humphrey & White, 2000; Koss, Gidycz, & Wisniewski, 1987; Parks, Hsieh, Taggart, & Bradizza, 2014). Although reported prevalence estimates of sexual aggression experienced by male college students are limited (Turchik, 2012), research on male sexual aggression indicates that self-reported prevalence estimates of perpetration range from 17%–20% (Strang, Peterson, Hill, & Heiman, 2013; Testa, Hoffman, Lucke, & Pagnan, 2015; Thompson, Koss, Kingree, Goree, & Rice, 2011). In addition to sexual aggression, college students report frequently engaging in unplanned sexual behavior when drinking or using drugs (e.g., Olmstead et al., 2015). Oswalt et al. (2005) found that 72% of sexually active students indicated that they had regretted having sex on at least one occasion in the past. Regretted sex is associated with heavy drinking, risky sexual behaviors (Orchowski et al., 2012), and has been rated as a negative alcohol-related event by 84% of college students (Mallett, Bachrach, & Turrissi, 2008). Psychological symptoms (e.g., anxiety and depression) have been positively associated with NSE (Miron & Orcutt, 2014; Schry, Maddox, & White, 2016). In addition, NSE have been associated with subsequent or secondary negative events (e.g., physical, psychological, and academic; Baker et al., 2016; Combs, Jordan, & Smith, 2014; Ulirsch et al., 2014).

Given high prevalence estimates for NSE among college students, as well as the potential for substantial secondary negative events that are associated with NSE, it is important to understand their correlates in order to develop programs to reduce NSE and associated negative events. To date, little research has explored the relation between NMUPD and NSE in general or specifically within college populations. Using data from the 2011–2013 national Youth Risk Behavior Surveys,

Clayton, Lowry, August, and Jones (2016) found that adolescents who engaged in NMUPD were more likely to report multiple types of risky sexual behavior (e.g., unprotected sex, ≥ 4 lifetime partners) compared to their non-using peers. In a smaller study of sexually active young adults who engaged in NMUPD, Wells, Kelly, Rendina, and Parsons (2015) found that 47.4% reported having penetrative sex under the influence of a prescription drug (i.e., stimulant, sedative, or painkiller), while 35.9% reported having unprotected sex after NMUPD. In addition, being White, younger, and a heterosexual male increased the odds of reporting unprotected anal or vaginal sex when using prescription drugs compared to when not using prescription drugs. Although this study provides evidence that NSE are associated with NMUPD among young adults, the results are not specific to college students, a population at high risk for both NSE and NMUPD.

In one of the few studies to date on college students, Benotsch, Koester, Luckman, Martin, and Cejka (2011) found that students who reported NMUPD (i.e., analgesics, anxiolytics/sedatives, and stimulants) subsequently engaged in risky sex (increased sex partners, increased unprotected sex) at proportions that were 2–3 times higher than students who did not report NMUPD. In an older study of 3642 female university students in Canada, Newton-Taylor, Dewit, and Glikzman (1998) found that students who used illicit drugs and medications prescribed for them (e.g., stimulants, sedatives, tranquilizers) were more likely to report being physically or sexually assaulted in the past year compared to students who did not use these drugs. Collectively, the few studies conducted to date suggest that the use of scheduled prescription drugs such as stimulants, sedatives and tranquilizers might be associated with NSE. However, these studies were limited in scope (e.g., conducted on one college campus) and differ substantially in methodology (e.g., drug use measurement, different outcomes – risky sex). Thus, additional studies are needed to determine the extent to which NMUPD is associated with NSE among college students.

1.2. Current study

The purpose of the current study was to assess prevalence estimates for three forms of NMUPD-associated NSE (regretted sex, sexual aggression victimization, and sexual aggression perpetration) among a sample of college students from two large public universities in New York State who reported any NMUPD. We further assessed the correlates of NMUPD-associated NSE, which included sex, race, year in school, psychological symptoms, illicit drug use, alcohol use, and NMUPD by drug class (stimulants, anxiolytics/sedatives, and analgesics). We hypothesize that, due to the potential for neuropsychological impairment, all three classes of prescription drugs will be positively associated with each type of NSE, even when controlling for illicit drug use, alcohol use, and the other covariates.

2. Methods

2.1. Participants

A total of 1755 college students completed a brief, confidential web survey designed to explore several issues related to NMUPD and the use of illegal drugs. The present analyses were restricted to the 509 students who (a) reported ever nonmedically using stimulants, anxiolytics/sedatives, or analgesics, and (b) provided data on all of the variables used in this study. Half of the students were male ($n = 255$) and half were female ($n = 254$). The average age of the students was 20.3 years ($SD = 1.92$, range 18–30 years). In terms of year in school, 10.8% were freshmen, 25.5% were sophomores, 26.1% were juniors, and 37.5% were seniors. The sample was racially/ethnically diverse with 68.4% White, non-Hispanic, 15.3% other/mixed race, non-Hispanic, 9.2% Hispanic and 7.1% Black, non-Hispanic.

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