

Just a Dare or Unaware? Outcomes and Motives of Drugging (“Drink Spiking”) Among Students at Three College Campuses

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Objective: Drugging (administering a drug to someone without their knowledge or consent) is acknowledged as a problem in “watch your drink” campaigns. However, research on this phenomenon is nascent. Prior research has primarily focused on drugging as a means of sexual assault, and has not addressed drugging more generally. **Method:** Survey data from 6,064 students at 3 universities was used to explore drugging among those who had drugged someone (or knew someone who had) and those who had been drugged. **Results:** More than 1 in 13 students reported being drugged (462 students, 7.8% of the sample, reported 539 incidents), and 83 students (1.4%) reported 172 incidents of drugging someone. Participants’ perceptions of why people drug others varied by gender. Women were much more likely to mention sex or sexual assault as a motive, while men were more likely to mention having fun as a motive. Participants also mentioned getting others more drunk or high and getting someone to relax as motives. It is possible that some motives (e.g., “to ‘loosen’ me up”) could be euphemisms for more coercive or sexual motives not directly stated. Outcomes for those drugged were also gendered, with female victims experiencing more negative outcomes, including sexual assault, blacking out, and getting sick. Although over 4 out of 5 of victims reported negative outcomes, a small number of (mostly male) victims said they enjoyed being drugged. **Conclusions:** To design interventions to prevent the negative consequences of drugging, the full context of drugging must be better understood.

Keywords: drugging, drink spiking, motives, alcohol

The guy who [drugged me] was an exchange student at a house party some friends took me to. Afterward, they took me to another friend’s house to “recover” since I was not in shape to go back to the dorm. They put me in his bed to sleep it off and I later woke up without any

clothes. They told me that both incidents were my fault, leading me to stop talking to them. (Female participant)

[Others were] concerned that I had consumed something other than alcohol because I was behaving strangely. They made sure I got a safe ride home. (Male participant)

This article was published Online First May 23, 2016.

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I suspect[ed] it was Xanax after telling my mom (an experienced nurse) the side effects I felt after consuming the drink. I was very lucky to have such good friends who took me home . . . before anything bad happened to me and now myself and my whole group of friends are very careful in receiving drinks and nobody in my large (over 50) group of friends has been drugged since (over 6 months now). (Female participant)

I have drank many times before, but it has never had this kind of effect, especially since I did not drink an excessive amount . . . the guys who may have been responsible made comments about giving me a “present” while we were taking shots. (Male participant)

Starting in the mid 1990s, there has been an increasing perception that drugging (i.e., administering a drug or alcohol to someone without their knowledge or consent) has become more commonplace (Beynon, McVeigh, McVeigh, Leavey, & Bellis, 2008;

Weiss & Colyer, 2010). In the Birmingham, England area, requests for toxicological analyses of patients presenting to hospitals following suspected drugging rose 77% from 2002 to 2004 (Elliott & Burgess, 2005). In the United States, reports also describe a perception that drugging cases are on the rise (Madea & Musshoff, 2009; Negrusz, Juhascik, & Gaensslen, 2005). “Watch your drink” awareness campaigns have become more commonplace as well, particularly on college campuses (e.g., Arizona State University, n.d.). More recently, however, some authors have suggested an alternative view—that drugging is an urban legend, a rare phenomenon that has been greatly exaggerated by media reports (Burgess, Donovan, & Moore, 2009; Weiss & Colyer, 2010). Weiss and Colyer (2010) state that drugging is a “crime narrative,” a socially constructed “good story” supported by little evidence that it actually occurs. The real problem, according to this argument, is binge drinking; sometimes people think they have been drugged when in fact, they have underestimated the amount and effects of alcohol that they voluntarily consumed. This is illustrated in a headline in the Daily Mail in 2009: “Date-Rape Drug? No Dear, You Just Had Too Much to Drink” (Martin, 2009). The purpose of this study is to elucidate the phenomena of drugging by presenting data from a large sample of university students.

In contrast to the frequent media reports and discussions of drugging on college campuses, research in the area of drugging is nascent. The discourse on drugging is based almost exclusively on anecdotal data. There is very little research that can prove or disprove either point of view, that is, that drugging is “on the rise” or that it has been overblown by the media. A second limitation of the discourse on drugging is that almost all of the empirical literature, as well as media reports, official government documents, and “watch your drink” campaigns focus on drugging as a means of sexual assault, with the victims being almost exclusively female. There is surprisingly little information on the prevalence of drugging more generally (meaning beyond the context of drug-facilitated sexual assault). However, it is possible that much of the time, drugging does not result in sexual assault. In Munich, for example, the primary crime associated with the drugging cases that were reported to the forensic medicine department was robbery (48%), with rape constituting 13% of such cases (Madea & Musshoff, 2009). Similarly, an Australian government report that examined drink spiking incidents reported to police and a drink spiking hotline found that one third resulted in sexual assault (Australia Ministerial Council on Drug Strategy, 2004). Another survey of campus crime victimization found that among students who stated that someone had “dropped a drug into your drink without your knowledge,” only 12% stated that they “were victimized by sexual assault or any other crime” after being drugged (K. Weiss, personal communication, September 11, 2012; Weiss & Colyer, 2010). Collectively, these data suggest that, despite the overwhelming emphasis on sexual assault in the media and the drugging literature, there may be other motives and other contexts for drugging.

Another challenge for researchers and other stakeholders interested in better understanding the drugging phenomenon is that of describing the result or consequences of being drugged. Researchers lack answers to these basic questions: What is the range of consequences for people who are drugged? How many people who are drugged are sexually assaulted versus other kinds of outcomes such as becoming ill, being helped by friends, or being physically

assaulted? Where does drugging typically occur? Are there patterns in the experience of drugging that differ by gender?

This study examines this much-discussed but underresearched phenomenon by presenting survey data from a large sample of American undergraduate students from three campuses. Research objectives include providing estimates of drugging prevalence, motives, and consequences based on the experiences of those who have drugged others or know someone who has, and those who believe they have been drugged. The study uses both quantitative data and responses to open-ended questions to explore this nascent area of research.

Prevalence of Drugging Victimization

The focus of this paper is drugging in general, including but not limited to drugging that results in sexual assault. There is very little data on the prevalence of drugging in general (i.e., drugging that is not limited to drug-facilitated sexual assault), and these estimates vary widely. One recent prevalence estimate from 959 American women aged 18–24 found that 7.8% of college women and 8.5% of noncollege women had been drugged (Coker, Follingstad, Bush, & Fisher, 2016). A second estimate comes from a West Virginia University campus crime study, in which 6% of students stated that someone had drugged them (Weiss, personal communication, 2012; Weiss & Colyer, 2010). In a sample of 805 Australians aged 18 to 35, 25% experienced drink spiking (McPherson, 2007). Finally, an Australian government report estimated that 3,000–4,000 drink spiking incidents occurred in Australia between 2002 and 2003 (15–19 incidents per 100,000 persons; Australia Ministerial Council on Drug Strategy, 2004).

In contrast to the dearth of information on general drugging, prevalence estimates of drug-facilitated sexual assault are available. Drug-facilitated sexual assault is defined as sexual assault that occurs as a result of intoxication due to drugs or alcohol deliberately given to the victim by the perpetrator (Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007). Kilpatrick et al.’s (2007) nationally representative telephone survey estimated that 2.7% of college women have experienced drug-facilitated sexual assault, a significantly higher percentage than the 2.3% of women in the general population who reported experiencing drug-facilitated sexual assault (cf. Krebs, Lindquist, Warner, Fisher, & Martin, 2007). Among patients who reported to hospital-based sexual assault treatment centers, rates of suspected drug-facilitated sexual assault ranged from 7% (Ledray & Kraft, 2001) to 21% (Du Mont et al., 2009; cf. McGregir, Lipowska, Shah, Du Mont, & De Siato, 2003; in this study the rate was 12%).

Difficulties in Estimating Drugging Victimization Prevalence and Forensic Toxicology Studies

Providing a population-based estimate of drugging victimization is extremely difficult because unless someone has witnessed someone else putting a substance into a beverage, it is often unclear if victims were actually drugged, or if they became incapacitated through their own consumption of alcohol, medications, drugs, or a combination of these (Australia Ministerial Council on Drug Strategy, 2004). Forensic toxicology studies, which examine a patient’s bodily fluids for the presence of drugs, can be helpful in sorting out which patients were drugged, but even these studies

have many uncertainties. Chief among these include the brief time in which some drugs are excreted by the body. Rohypnol (“roofies”) can be detected up to 72 hours after ingestion (U.S. Department of Health and Human Services, 2012), but gamma-hydroxybutyrate (GHB) may be undetectable as little as 10 hours after ingestion (Elliott & Burgess, 2005; Madea & Musshoff, 2009; Negrusz et al., 2005). While some forensic toxicology studies stipulate that patients must be tested within 72 hours of the suspected drugging incident (Du Mont et al., 2010; Juhascik et al., 2007), researchers acknowledge that even within this timeframe some drugs may not be detectable (Negrusz et al., 2005). Another issue is that patients may be reluctant to disclose to medical providers their voluntary use of illegal drugs (Negrusz et al., 2005).

Likely for these reasons, estimates of drugging from forensic toxicology studies vary widely. Du Mont et al. (2010) examined data from urine toxicology tests with 178 patients who suspected they had been drugged and sexually assaulted. Among these patients, 49% were confirmed as drugging cases through toxicology results revealing drugs that the person did not report voluntarily consuming. However, Negrusz, Juhascik, and Gaensslen (2005) found that only 4.2% of patients met their criteria for drug-facilitated sexual assault. Another study of emergency department patients who suspected they had been drugged found drugs that the patient reported they did not take in 19% of cases (Hughes, Peters, Davies, & Griffiths, 2007).

Prevalence and Motives of Drugging Perpetration

We found only one study examining drugging perpetrators (McPherson, 2007). While 1% of participants admitted to adding drugs to a person’s drink, 16% added extra alcohol shots to alcoholic drinks, and 6% added alcohol to nonalcoholic drinks. Half of these individuals added additional alcohol to drinks to get the recipient more intoxicated. Other motives described by individuals who added drugs or alcohol to someone’s drink were related to sex and having fun: 29% indicated they thought spiking someone’s drink would put them in the mood for sex; 21% percent said it was easier to approach someone for sex if the person was drunk or drugged; and 43% spiked a person’s drink “for fun” (McPherson, 2007).

It is possible that motives for drugging may be related to motives for other types of interpersonal aggression. Even if a person is drugging someone else simply “for fun,” with no intent of taking advantage of the drugged person, the druggier is still putting a drug in someone else’s body without their consent—and this is coercive and controlling behavior. Coercion, control, and lack of consent are familiar constructs in the interpersonal aggression literature. For example, the power and control model of intimate partner violence presumes that a need for enacting power and control over one’s partner is the root cause of violence, coercive control behaviors, and abuse against the partner (Pence & Paymar, 1993). Similarly, the confluence model proposes that one of the causal factors in men’s sexual aggression against women is satisfaction from controlling and dominating women (Malamuth, Linz, Heavey, Barnes, & Acker, 1995). The power a woman has due to her sexual appeal may be threatening to men who are prone to sexual aggression; using coercion to obtain sex “reduces her control over him by eliminating her ability to exercise choice”

(Malamuth et al., 1995, p. 354). Drugging may involve similar motives of power and control.

Why Examine Drugging With a College Sample?

College students are an important population in which to examine drugging, because of risk behaviors that are highly prevalent in this environment that may be related to drugging. Compared with same-aged peers who are not attending college, those in college report higher levels of binge drinking (O’Malley & Johnston, 2002) and may be at increased risk for sexual assault (Krebs et al., 2007).

To explore the phenomenon of drugging, this study addresses these research questions: (a) What are people’s motives for drugging?, (b) Which drugs are being used to drug others?, (c) How often does sexual assault result from drugging?, (d) What are the outcomes for those who are drugged?, (e) Are there patterns in the experience of drugging that differ by gender?, and (f) Where does drugging typically occur?

Method

Sampling

The current study is part of a larger longitudinal study of dating violence and sexual violence among college students at three universities—the University of South Carolina, the University of Kentucky, and the University of Cincinnati (Coker et al., 2015). Identical items were included in online surveys, and the same sampling methodology was used for all three campuses. The final dataset contained $N = 6,064$ students. Surveys were administered during March and April of 2010–2013. In 2010, a stratified random sample of 16,000 full-time undergraduate students age 18–24 was obtained using enrollment data from the Registrar’s office at each campus. Stratum selection was based on year in school with 25% from each class (first year, sophomore, junior, and senior). In 2011, 2012, and 2013, all students who completed the survey in the previous year (except for seniors who were assumed to have graduated) were e-mailed and invited to complete the survey again. Also in 2011, 2012, and 2013, first-year students were randomly selected and invited to participate in the survey to replenish the graduating seniors.

The current study employs data from 2012 and 2013 only. In 2012, the sample included first year students who were invited to complete the survey for the first time in 2012 ($N = 6,679$, with 2,398 responses; response rate = 35.9%); and sophomores, juniors, and seniors who completed the survey in 2011 and were invited to complete it again in 2012 ($N = 5,213$ with 2,457 responses; response rate = 47.1%). In 2013, the sample included only first-year students who had *not* completed the survey in 2012 ($N = 3,994$, with 1,299 responses; response rate = 32.5%). The overall response rate was 38.7%.

Procedure

In March or April of 2012 and 2013, an e-mail describing the online survey and inviting students to participate was sent to all sampled students’ e-mail addresses. Students who were interested in participating were instructed to click on the survey link in the

e-mail. Participants received a \$5 Amazon e-gift certificate. Reminder e-mails were sent approximately every 3–4 days for the following 4 weeks. The Institutional Review Board at each of the universities approved the research protocol; a waiver of written consent was granted and a certificate of confidentiality was obtained through the National Institute of Child Health and Human Development.

Participants

Respondents age 25 or older ($N = 4$) or who were missing the age variable ($N = 8$) were removed so that the sample would be representative of traditionally aged college students (aged 18–24; U.S. Department of Education, n.d.). Sixty-one participants answered “no” to the question “Do you want to complete the survey” and were directed out of the survey. Our final dataset contained $N = 6,064$ students, 3,755 (61.9%) of whom were female and 2,229 (36.8%) were male (80, 1.3%, did not report gender). The majority of the sample identified as White (80.7%), with 7.0% identifying as Black or African American, 3.7% as Asian, 1.6% as Hispanic or Latino(a), 0.2% as American Indian or Alaska Native, 0.1% as Native Hawaiian or Other Pacific Islander, 4.6% indicating more than one race, and 2.0% not reporting race. Consistent with the sampling design, over half the sample (57.6%) were first year students, 23.3% were sophomores, 9.6% were juniors, 8.0% were seniors, and 0.9% did not report year in school. The modal age of the sample was 19 (41.3%), followed by aged 18 (26.4%), aged 20 (17.7%), aged 21 (9.2%), aged 22 (4.5%), and aged 23–24 (0.9%).

Measures

Drugging victimization was assessed with a single item: “Since the beginning of [this academic year’s] fall term, how many times do you suspect or know that someone put a drug into your drink without your knowledge?” The response scale included *0 times, 1 time, 2 times, 3–5 times, 6 or more times*, “This happened, but not since the beginning of [this year’s] Fall term,” and “Choose not to answer (coded as missing).” Students who responded that they had been drugged (i.e., they gave a response other than *0* or *Choose not to answer*) were asked several follow-up questions. These included: “Where did this happen?” with response choices: *in a bar; in a fraternity; in a sorority; in a dorm; in a house or apartment; or other, please specify* with a text box for the respondent to provide a location. Next, participants were asked “What were the consequences for you? (check all that apply).” Responses choices included *blacked out; became physically ill; enjoyed it, had fun; experienced unwanted sexual touching; forced to have sexual intercourse; was physically hurt (hit, slapped, beat up); and other, please specify* with a text box for open-ended responses. Respondents were then asked two open-ended questions with text boxes to type their responses: “Why do you think someone put a drug in your drink?” and “Is there anything else you can tell us about when you were drugged?”

While conventional reliability indices cannot be determined as drugging victimization is assessed with a single item, relative consistency across the three universities and across year of survey provides some indication of reliability. The percent drugged was 6.0%, 7.2%, and 10.8% at the three sites, and 7.5% for year 1 of

the survey and 9.0% for year 2. To assess validity of the item, we examined its correlation with binge drinking (assessed with the item, “In the past month, on how many days did you have 5 or more drinks of alcohol in a row, within a couple of hours,” with responses ranging from *I never drink* and *0 days* to *20–31 days*). Binge drinking and drugging victimization were significantly correlated at $r = .191, p < .01$.

Drugging perpetration or knowing a drugging perpetrator was assessed with one item that varied slightly by year of survey. In 2012, respondents were asked, “Since the beginning of [this academic year’s] fall term, have you or someone you know put drugs in someone else’s drink on purpose?” The response scale included *0 times, 1 time, 2 times, 3–5 times, 6–9 times, 10 or more times*, “Yes, but not since the beginning of [this year’s] Fall term,” and “Choose not to answer” (coded as missing). In 2013, the question was worded “Since the beginning of [this academic year’s] fall term, have you or someone you know put drugs in someone else’s drink without their knowledge?,” and the response scale was identical.

Students who responded that they or someone they knew had drugged someone (i.e., they gave a response other than *0* or *choose not to answer*) were asked several follow-up questions. These included: “If you or someone you know ever put a drug in someone’s drink without their knowledge, what was the reason for doing that?” followed by a text box for the respondent to type their response. Participants were then asked, “What drug or drugs were used? (check all that apply).” Responses in 2012 included *roofies (Rohypnol); GHB; cocaine; ecstasy; methamphetamine; I do not know; or Other, please specify* with a text box for comments. In 2013, the additional options of *Xanax, ketamine, and Benadryl* were added based on comments from the 2012 survey.

Location of drugging was assessed with the question “Where did this happen?” Response choices were identical to those described above for drugging victimization. Finally, respondents were asked “Did you or someone you know engage in anything sexual with this person?” with response choices of *yes* or *no*. Also in 2013 only, respondents who drugged someone or knew a druggier and indicated that this happened more than once were directed to two sets of follow-up questions, identical to the questions above; one set of questions was preceded by the statement, “If you or someone you know ever put a drug in someone’s drink, please tell us about the *first time* that happened.” The second set of questions was preceded by the statement, “If you or someone you know ever put a drug in someone’s drink, please tell us about the *most recent time* that happened.” These data were combined in the analyses.

Reliability of the drugging perpetration/knowing a druggier item is indicated by consistent endorsement of the item across the three universities (1.3%, 1.9%, 1.2%) and across years (1.4% in year 1, 1.6% in year 2). To assess validity of the item, we reasoned that individuals who drug others may be more likely to engage in other types of controlling and abusive behavior. Therefore, we examined its correlation with measures of sexual aggression and physical dating aggression. Sexual aggression perpetration was assessed using three items adapted from the National Intimate Partner and Sexual Violence Survey (Black et al., 2011): “Since the beginning of [this academic year’s] fall term, how many times did you: have sexual activities with someone when they didn’t want to because (a) you threatened to end your relationship if they didn’t, or pressured them with arguments or begging; (b) they were drunk or

high on drugs; (c) you threatened to use or used physical force (twisting their arm, holding them down, etc.),” Cronbach’s alpha = .89 for these items. Physical dating aggression was assessed with four items adapted from the Revised Conflict Tactics Scale (Straus, Hamby, & Warren, 2003): “Since the beginning of [this academic year’s] fall term, did you do any of the following to a current or past partner? By partner, we mean any current or former spouse, boyfriend, girlfriend, or dating partner or any person with whom you have ever been romantically or sexually involved. (a) I threw something at my partner that could hurt my partner; (b) I pushed or shoved my partner; (c) I punched or beat up my partner; (d) I used a knife, gun, or something that could hurt my partner,” Cronbach’s alpha = .78 for these items. The response scale for all sexual and physical aggression items was: *0 times, 1 time, 2 times, 3–5 times, 6–9 times, 10 or more times*, “Yes, but not since the beginning of [this year’s] fall term,” and “Choose not to answer” (coded as missing). Drugging perpetration/knowing a druggier did correlate with sexual aggression, $r = .206$, $p < .01$, and physical dating aggression, $r = .219$, $p < .01$.

Open-Ended Comments

Qualitative data from the open-ended comments were coded by the first two authors. We used conventional content analysis, in which the codes were derived from the data during data analyses. Conventional content analysis was appropriate for this study because our aim was to describe a phenomenon for which little theory or research literature exists (Hsieh & Shannon, 2005). Because most responses were short phrases or single sentences, codes were mostly straightforward and required little inference. Initially, the second author coded the data from the open-ended comments. The first author then read through all of the data to ascertain if any codes needed to be changed. The first author agreed with over 90% of the initial codes.

Results

Prevalence of Drugging

Eighty-three students (1.4%) indicated that they or someone they know had put a drug in someone’s drink (see Table 1). It is

important to note that the item is worded such that we do not know how many of the 83 students drugged someone themselves, versus how many did not, but knew somebody who drugged another. Forty-five of the students who reported drugging or knowing a druggier were female (1.2% of female students) and 38 were male (1.8% of male students). A larger number of students, 1 in 13 ($n = 462$, 7.8%), responded that they suspected or knew that someone put a drug in their drink without their knowledge (see Table 2). Over twice as many women reported being drugged as compared with men; 9.5% ($N = 357$) of female students suspected or knew that they were drugged, as compared with 4.2% ($N = 94$) of male students (Wald $\chi^2[1] = 52.81$, $p < .001$, odds ratio = 2.38).

Motives for Drugging

Of the 51 respondents who indicated that they or someone they knew drugged someone and answered this question, the two most commonly cited motives were fun ($n = 14$) and to have sex or to sexually assault someone ($n = 12$; see Table 3). Gender differences were apparent in these motives; men were more likely to list motives related to fun, while women were more likely to list motives related to sex or sexual assault. The remaining categories had too few responses to ascertain gendered patterns. While 6 respondents did not know what the motive was, others stated that it was to make someone calm down or go to sleep ($n = 5$), gave a response that was coded as “other” ($n = 5$), indicated that the druggier wanted to observe the effects of the drugs on others ($n = 3$), or that the druggier was mean or wanted revenge ($n = 2$). A few participants stated that the person knew that they were being drugged ($n = 2$), the druggier had also used the drug on him/herself ($n = 2$), or that the victim was drugged by mistake ($n = 1$).

Additional information about the possible motives of drugging perpetrators can be derived from drugging victims’ responses. Of course, victims do not have access to what perpetrators are thinking and can only speculate regarding the person’s motives, but victims’ perceptions nevertheless provide insights as to how drugging is understood by those who have experienced it. Victims were asked two open-ended questions that yielded information about motives: “Why do you think someone put a drug in your drink?” and “Is there anything else you can tell us about being drugged?” Responses from victims were generally consistent with responses

Table 1
Frequency of Individuals Who Drugged Someone or Knew a Person Who Drugged Someone

	Frequency	Valid percent	Number of incidents in past academic year
Never	5,735	98.6	0
1 time	45	.8	45
2 times	11	.2	22
3–5 times	9	.2	27
6–9 times	3	.1	18
10 or more times	6	.1	60
Yes, but not since the beginning of this school term	9	.2	N/A
Total who drugged or knew someone who did	83	1.4	172

Note. Total $N = 6,064$; missing $N = 236$; $N = 10$ choose not to answer; Total valid responses = 5,818. Number of incidents in past academic year calculated by summing across the number of times that drugging occurred (e.g., 11 respondents said drugging occurred 2 times, resulting in an estimate of 22 total incidents). For responses that included a range (e.g., 3–5 times), we used the lowest estimate, that is, 3 times.

Table 2
Frequency of Individuals Who Suspected or Knew That Someone Put a Drug in Their Drink Without Their Knowledge

	Frequency	Valid percent	Number of incidents in past academic year
Never	5,462	92.2	0
1 time	317	5.4	317
2 times	51	.9	102
3–5 times	22	.4	66
6 or more times	9	.2	54
Yes, but not since the beginning of this school term	63	1.1	N/A
Total	462	7.8	539

Note. Total $N = 6,064$; missing $N = 138$; $N = 2$ choose not to answer; total valid responses = 5,924. Number of incidents in past academic year calculated by summing across the number of times that drugging occurred (e.g., 51 respondents said drugging occurred 2 times, resulting in an estimate of 102 total incidents). For responses that included a range (e.g., 3–5 times), we used the lowest estimate, that is, 3 times.

from those who drugged someone or knew a druggier, and differed by gender (see Table 4). Again, women were much more likely to mention sexual assault as a motive; this was the most frequent response ($n = 57$). The second most common response indicated that the perpetrator wanted to have fun ($n = 30$); men were more likely to mention this motive. A closely related motive was to get people to loosen up or get them more drunk or high ($n = 18$); no gender differences were observed for this motive. Many respondents said they did not know ($n = 47$) or gave responses coded as other ($n = 33$). A few respondents thought they were mistakenly drugged ($n = 9$), and 6 respondents said that the purpose was to be mean or get revenge.

Types of Drugs Used

Of the respondents who answered this question and knew what drug had been used ($n = 88$ responses), 31.8% ($n = 28$) indicated that the drug used was roofies (Rohypnol), while 30.7% ($n = 27$) did not know what the drug was. This was followed by Xanax (11.4%, $n = 10$), ecstasy (9.1%, $n = 8$), and cocaine (6.8%, $n = 6$). Three respondents each stated the drug used was GHB or methamphetamine, while two stated it was ketamine, and one stated it was Benadryl. Additional drugs listed by respondents included Advil, alcohol, Adderall, Benzo (presumably, a benzodiazepine), laxatives, LSD, rum, and valium.

Sexual Assault and Other Outcomes of Drugging

Findings revealed that sexual assault was associated with drugging in some cases. When respondents who drugged someone or knew a druggier were asked if they or someone they knew had engaged in anything sexual with the person who was drugged, 29.1% responded yes. When drugging victims were asked this same question, 14.5% responded yes (see Table 5). Most frequently, this was unwanted sexual touching (12.1%), but 5.4% reported forced sexual intercourse (and some victims reported both forms of sexual victimization). The most common outcome that victims reported was blacking out (68.8%), followed by becoming physically ill (31.2%). A few victims indicated that they were physically hurt, through being hit, slapped, or beat up (1.9%). Overall, 81.4% of drugging victims reported at least one negative

outcome. In contrast to these highly negative experiences, 13.9% responded that they enjoyed the experience.

Gender Differences in the Experience of Being Drugged

Gender differences were evident in outcomes of drugging, with female victims being more likely to report most negative consequences as compared with male victims. Female victims were more likely to report an unwanted sexual experience; 16.8% of female victims had unwanted sex, compared with 6.4% of male victims, $\chi^2(1, N = 451) = 6.47, p < .05$. Female victims were also more likely to black out, 74.2% female victims, 51.1% male victims, $\chi^2(1, N = 451) = 18.80, p < .001$, and become physically ill, 34.7% female victims, 18.1% male victims, $\chi^2(1, N = 451) = 9.60, p < .01$. In contrast, male victims were more likely to report they enjoyed the experience, 8.1% female victims, 37.2% male victims, $\chi^2(1, N = 451) = 51.78, p < .001$. However, male victims were also more likely to have been physically hurt (hit, slapped, or beat up; 1.1% female victims, 5.3% male victims), $\chi^2(1, N = 451) = 6.71, p < .05$.

Some victims elaborated on the consequences to drugging that they experienced in their open-ended responses (see Table 5). Many described physical consequences, such as feeling dizzy, overly intoxicated, tired, being unable to remember what happened, and hyperactivity; nine mentioned receiving medical treatment. One participant wrote, "I fell and ended up in the hospital. I have permanent scars and nerve damage in my mouth. I only told one person." Several participants were victims of crimes: two participants experienced theft, one almost got hit by a car, and another participant received a charge of driving under the influence. Thirteen described sexual victimizations. Nine responded that they did not consume the drink after suspecting it had been drugged, and another 12 reported nothing happened. Nine reported emotional reactions including fear, feeling violated, and being mortified at their behavior while drugged. One participant differentiated between being drugged in a "safe environment with friends" with Xanax, as opposed to "roofies," which she described as "very unpleasant."

Table 3
Reasons for Drugging, as Reported by Participants Who Drugged Someone or Knew a Drugger

Reason	Frequency	Example quotations
To have fun/be funny	14 (8 M, 6 F)	I put happiness in their drinks (M). Jokes (M); for fun (M); hilarity (M). So they could have fun (F). For fun. Was not anything serious (F). I have personally not done this, but I know of other people who have. Mostly, they do it for what they think will be people's enjoyment. Only once have I heard of it being done for harm (F).
Sex/Sexual assault	12 (3 M, 9 F)	He wanted to do sexual things with her (M). I know a guy that did that so he could get girls to sleep with him (F). To have sex with them without them realizing it to say no (F). I am guessing for a hook-up, but I told her and we left (F). He wanted to have sex with her, but she had been refusing him for a while (F).
Other	5 (1 M, 3 F)	My friend knew he'd like it, so he put it in his drink (M). We spiked someone's hot chocolate without her knowledge (F).
Don't know	6 (2 M, 4 F)	I'm not sure why it happened. After it was observed, the drugger was, to put it lightly, punished, and the druggie was driven home with information on how to press charges (M). I did not personally know this person, I just know that it happened (M). I honestly don't know what their motive was, but I witness[ed] them putting drugs in a cooler (F).
Get person to calm down/relax/go to sleep	5 (1 M, 4 F)	So he would pass out early in the night (M). They were geeked on ecstasy, and we wanted them to go to sleep . . . Benadryl (F). She was too drunk, so they put a drug in her drink to calm her down and make her fall asleep (F). They wanted the person to calm down (F). To relax them (F).
To observe the effect of the drug	3 (3 F)	To see what happens (F). They wanted to see if the drugs worked (F). To see how they would react physically, and if they would remember it (F).
To be mean/vengeance	2 (2 M)	Put laxatives in it, so they would shit a lot (M). Because the person I know is a sadist pig and probable communist informer (M).
Person knew they were being drugged	2 (1 M, 1 F)	They did it with their knowledge (F).
Drugger used drug on him/herself	2 (1 M, 1 F)	They were high themselves (M). They did it to themselves (F).
Mistakenly drugged	1 (1 F)	They meant to give it to another person (F).

Note. M = Male; F = Female. Total valid responses $n = 51$ (19 M, 32 F).

One participant described the event and consequences in detail:

I asked for a bottle of water, and the guy went to get one from the refrigerator and the seal had been broken but I was too thirsty to care. I drank the water really quick and I don't remember much from there, but my . . . friends . . . said I blacked out and started choking on my vomit. They called an ambulance, but met them on the way to the hospital because I was unconscious and they had to do CPR. The guy who drugged me had done it to another girl that night, too, and is now in prison.

Where Does Drugging Occur?

Participants who drugged someone or who knew someone who did, as well as victims of drugging, were asked where the drugging had occurred. Participants who drugged someone or knew a drugger indicated that 37.4% of druggings occurred in a house or apartment; 24.2% in a fraternity; 15.4% in a bar; 13.2% in a dorm; and 9.8% in a sorority. Responses of the drugging victims were similar to participants who drugged someone or knew someone

who did: 38.0% of druggings happened in a house or apartment; 29.7% in a fraternity; 26.3% in a bar; 4.8% in a dorm; and 1.2% in a sorority. Other locations included party/tailgate, concert or other public event, hotel or vacation, high school, and club.

Discussion

These data indicate that drugging is more than simply an "urban legend" (Burgess, Donovan, & Moore, 2009; Weiss & Colyer, 2010), at least for this college sample. Eighty-three participants (1.4%) reported 172 incidents in which they or someone else drugged someone, and 462 participants (7.8%) suspected or knew that they were drugged. The reasons for drugging provided by both those who drugged someone or knew a drugger, and drugging victims, indicate that there are a variety of motives for drugging, including but not limited to sexual assault. Participants' beliefs regarding motives for drugging were gendered; women were more likely to identify sexual assault as a motive, while men were more likely to mention motives related to fun. These gendered percep-

Table 4

Reasons for Drugging as Reported by Participants Who Knew or Suspected They Had Been Drugged

Reason	Frequency	Example quotations
To have fun/be funny/enjoyment	30 (11 M, 19 F) (26% M, 12% F comments)	Laughs (M). To "spice up" my night; to make it more fun (M). To be funny and see what happens (F). They probably enjoyed the effects themselves and wanted it to affect others as well (F). They had put a bar ^a in their drink mix for fun themselves and just offered me some of it (F). They put it in the PJ (community drink) because they thought it would help us have more fun (F). Like to see people act crazy (F).
Get people to loosen up; get people more drunk or high	18 (4 M, 14 F) (9% M, 9% F comments)	To "loosen" me up, when they were just boring (M). He told me later that he'd done it. It wasn't a drug that makes you black out; it was a drug that when mixed with alcohol makes you very "fucked up"; he does it to his own drinks, so I guess he just thought I'd like to be messed up too (F)? I don't get drunk, and they wanted to see me more "loose" I suppose (F). I think it was to get me to loosen up and enjoy myself more, and the intent was not really malevolent (F).
Sex/Sexual assault	57 (7 M, 50 F) (16% M, 33% F comments)	Fraternity boys drug PJ all the time to get girls really drunk (F). Attempting to take advantage of me (M). Cause I'm a very sexy man (M). Guys do it when a girl tells them she won't hook up with them (F). This boy drugged me, and later on in the night raped me. I don't know why he did it, I guess to get what he wanted from me since I wasn't going to do it without being drugged (F). Try to have sex with me (F). I only had one drink and blacked out completely. When I woke up I was naked next to someone I didn't know. He was really rude when I woke up and left the house. I felt really strange, like I was in a dream just watching everything happen (F). To rape us. Myself and the other girl I was out with were drugged, and then confronted behind the bar on the patio and one of the three men said "I'm going to get in your pants tonight" (F).
Don't know	47 (8 M, 38 F)* (19% M, 25% F comments)	No clue (M). I don't know if it was specifically intended for me or why (F). It was the girlfriend of a guy I knew, and I honestly have no idea why she did it (F).
Mistakenly drugged	9 (4 M, 4 F)* (9% M, 3% F comments)	I think it was just in the jungle juice at a party. Everyone drank out of it, so it was probably meant for the girls (M). Because they are dumbasses/it was intended for others (M). I think they thought it was their own drink (F). Well this guy my friend and I kinda knew made us drinks, and we both blacked out to where we didn't remember anything. I think he wanted to take her home, and I just got caught up in it, because I was drinking the same stuff as her (F).
To be mean/revenge	6 (3 M, 3 F) (7% M, 2% F comments)	Cause I told that bitch to go and make me a sandwich . . . she didn't like that too much (M). They aren't nice (M). To make my boyfriend mad. The guy who did it wanted to date me, but I wasn't interested (F).
Other	33 (6 M, 26 F) (14% M, 17% F comments)	Because they wanted me not to remember the night (F). Xanax in a large bucket of drink (F). I was already drunk, probably an easy target (F). Because they think that's what cool people in fraternities do (F).

Note. M = Male; F = Female. Total valid responses $n = 199$ (43 M, 154 F, 2 gender not reported).

^a "Bar" most likely refers to a Xanax bar.

* Some participants did not report gender.

tions of motives corresponded with consequences of drugging. Women were more likely than men to have been sexually assaulted while drugged, and men were much more likely than women to indicate that they enjoyed being drugged.

Sexual assault co-occurs with drugging in many cases. Among respondents who drugged someone or knew a druggier, 29.1% stated

that someone had done something sexual with the victim. Among drugging victims, 14.5% reported some form of sexual assault, including rape. This co-occurrence of sexual assault and drugging may be higher than other crimes. For example, among home burglaries in which a household member was present, 2.2% were victims of a sexual assault during the burglary (Catalano, 2010). A similar study in

Table 5
Consequences of Drugging for Victim

Consequence	Frequency	Percent
Experienced unwanted sexual touching	56 (5 M, 50 F)*	12.1
Forced to have sexual intercourse	25 (2 M, 23 F)	5.4
Experienced either unwanted sexual touching, forced to have sexual intercourse, or both	67 (6 M, 60 F)*	14.5
Blacked out	318 (48 M, 265 F)*	68.8
Became physically ill	144 (17 M, 124 F)	31.2
Enjoyed it; had fun	64 (35 M, 29 F)	13.9
Was physically hurt (hit, slapped, beat up)	9 (5 M, 4 F)	1.9
Other, please specify		
Physical effects	55 (13 M, 42 F)	
Tripped for hours (M).		
Hallucinations. Please note this was a nonalcoholic drink (M).		
Dizzy (F).		
Side effects like being on speed . . . was told I wouldn't . . . stop moving or talking (F).		
Couldn't control my actions or what was going on around me (F).		
Slept walked, woke up in a stranger's room in my dorm (F).		
Panic attack . . . for 3 hours (F).		
Got medical attention	9 (1 M, 8 F)	
Went to the ER (F).		
It was very frightening to wake up in the hospital (F).		
Criminal offense	4 (1 M, 3 F)	
My wallet with my house key, id, and credit card was stolen. They bought \$100 in gas with my card the next morning (F).		
DUI happened (M).		
They stole from me (F).		
I almost got hit by a car (F).		
Sexual victimization	13 (2 M, 11 F)	
Woke up naked, alone, and all cut up and bruised, and my bra was stolen a different time with a different guy (F).		
The next day I asked who I had sex with, and they lied about it, saying I did with many different people. I don't know if he used a condom, and I don't know the name of the person I slept with (F).		
I took an emergency contraceptive (F).		
I only remember falling asleep on the couch and waking up with all my clothes off and a puddle of blood between my legs and being sore for a couple of days (F).		
Did not consume drink	9 (0 M, 9 F)	
I threw out the drink and left the party (F).		
Nothing	12 (1 M, 11 F)	
Nothing, but a friend told me it happened (F).		
Emotional reactions	9 (0 M, 9 F)	
I was glad I had male friends out with me that night. It was . . . a frightening night (F).		
Any time Xanax was involved I was in a safe environment with friends, but roofies was a very unpleasant experience (F).		
The next day even though nothing happened, I did feel violated that someone had done this to me (F).		
When I woke up the next morning, I thought everything was normal until my friends told me what had happened. It was mortifying (F).		
Cannot remember	22 (3 M, 19 F)	
I don't remember a lot of it (F).		
Other	11 (4 M, 7 F)	
I left and did not enjoy it (F).		
Woke up in car parked in lot (F).		
Had to be watched all night (M).		
They tried to take me into a room (F).		

Note. Open-ended responses referring to consequences of drugging are drawn from these items: "What were the consequences for you? Other, please specify," and "Is there anything else you can tell us about when you were drugged?" F = Female; M = Male. Total valid responses for open-ended responses relevant to consequences, $n = 144$ (25 M, 119 F).

* Some participants did not report gender.

South Africa found that 4% of home burglary victims were raped during the burglary (Newham, 2008). Some participants in the present study also mentioned being victimized by other crimes while drugged, such as theft. In addition to co-occurring victimizations, 81.4% of drugging victims reported at least one negative outcome, including

blacking out, being very ill, and being beaten up. A few respondents mentioned engaging in dangerous behaviors while drugged, such as driving, or waking up in a stranger's dorm room.

Some victims were spared the worst consequences because they threw out the drink ("I did not drink it because it seemed sketchy"),

left as soon as they suspected their drink had been drugged (“Left apartment as soon as I suspected it”), or were cared for by friends who prevented them from being drugged (“Friend caught it so I didn’t drink it”) or helped them when they were ill (“Had to be watched all night”). As with other forms of victimization, helpful bystanders can play a critical role in prevention.

Some participants stated that they were drugged after previously refusing the druggers’ overtures (e.g., “This particular guy kept asking me to hook-up and I kept denying him. I think he did it to try and show me that even if I deny him he would eventually have his way”). This element of control was summarized in another victim’s comment: “They must have a very small ego that can only be satisfied with controlling others against their will.” These controlling motives are very consistent with both the confluence model of sexual aggression (Malamuth et al., 1995) and the power and control model of partner aggression (Pence & Paymar, 1993).

Participants also indicated other motives, many (if not all) of which may be coercive, but do not specifically mention a sexual context. Many participants indicated that people drug others because they thought the person would have fun or because they thought it was funny. While these participants did not directly mention sex, it is possible that in some cases “fun” could be coded language that indirectly refers to sex (e.g., “To ‘spice up’ my night; to make it more fun”). Along these lines, a few responses included both fun and sex in the same comment: “Any reason, really. To make the party more lively or to get about 30 girls into bed with the person who spiked the drinks”; “either because they thought it was funny or to take advantage of me.”

Reasons related to making someone relax or calm down suggest that the person who was drugged is perceived as out of control and the drug is used to calm them. A related motive was to get people more drunk or high (e.g., “To get everyone drunker faster”), regardless of the person’s wishes (“I had been repeatedly told that I needed to loosen up and could have been either slipped a drug in my drink or they could have put more alcohol in my drink”). Again, the motive to “make us loosen up” could be to make the drugged persons available for sex, although this is not specifically stated in these responses. A few participants indicated that the motive was more benign (“I think it was to get me to loosen up and enjoy myself more, and the intent was not really malevolent”).

Some participants believed that they may have been mistakenly drugged (“Because they are dumbasses/it was intended for others”). Some comments suggested that the respondent consumed a drink that was meant for women (“On accident, it was probably meant for a girl”), perhaps for sexual reasons although this is unstated. Other comments indicate that the druggers are a mean person (“Because the person I know is a sadist pig and probable communist informer”) or wants revenge (“To make my boyfriend mad”). Some motives seem to be related to curiosity about how the drug would affect others (e.g., “They wanted to see if the drugs worked”). A few participants indicated that the person being drugged knew, suggesting a context in which people allow others to “surprise” them with a drugged beverage. Another comment, “They did it to themselves,” suggests that the druggers took the drug themselves and gave it to others, who may or may not have been aware that they were receiving a drug.

Drugs Used

Almost half of the participants who stated what drug had been used indicated the drug was roofies (Rohypnol). This finding is surprising because toxicology studies typically find the classic “date rape” drugs (Rohypnol, GHB, and ketamine) at rates of 5% or less (Elliott & Burgess, 2005; Hughes et al., 2007; Madea & Musshoff, 2009; Negrusz et al., 2005). Anecdotally, students have told us “getting roofied” is often used as a catch-all term for being drugged, and can refer to any drug put in a drink, not necessarily Rohypnol. Future research will need to be conducted to further explore what drugs are being used for drugging among college students as well as other populations.

Limitations

It must be noted that we have no way of knowing if the drugging victims were actually drugged or not, and many victims were not certain either. It is possible that some respondents drank too much, or drank a more potent kind of alcohol than they were accustomed to. Further, many common drugs, including over-the-counter and prescription drugs, interact with alcohol, increasing its effects (Elliott & Burgess, 2005). Adding to the uncertainty, victims often do not remember what happened while they were drugged. The very nature of drugging is such that, unless someone witnessed someone else putting a drug in a drink, victims are often unsure if they were drugged. One victim alluded to this dilemma: “It does not feel that you are drugged at first and then you start to realize certain things that you are doing are not something that you would do. The scariest thing about it is that you have no control over your body, but you have to be the one that has to identify that you have been drugged.” The present study obtained information on drugging from those who perpetrated drugging or knew a druggers, as these data are less subject to ambiguity about what actually happened.

The data provided here are based on a response rate of 38.7%. While this response rate is typical of online surveys of college students, it does not provide any information about sampled students who did not respond and may have different experiences. The data are also not representative of individuals outside of a college setting.

Research Implications

Data on motives for drugging implicate coercion and control as key factors in why one person drugs another. Drugging someone to obtain sex is clearly coercive, but so too is drugging someone for revenge, to be mean, or to get them to calm down. Drugging others “for fun” or to “spice up” their night entails tricking someone into ingesting a substance without their knowledge or consent. The significant correlations found between drugging perpetration/knowing a druggers, sexual aggression, and physical dating aggression support this contention. A promising future research direction is to explore factors that have been found to be predictive of perpetrating sexual aggression, coercive control, and abuse in relationships, and to examine if these factors are predictive of drugging perpetration.

Clinical and Policy Implications

Interventions to address drugging are not research-based, and, to our knowledge, are exclusively victim-focused. The lack of interventions targeting individuals who drug others is not surprising,

given the absence of research on these individuals. The information on motives and outcomes reported here could be used to start developing interventions that target those doing the drugging. These interventions should move beyond the exclusive focus on sexual assault, and should address the varied motives of those who drug others. Because many of those who drug others believe that the behavior is fun and minimize the risks involved, interventions could provide information about the dangers of overdosing. Interventions could also target issues of consent—just as people have a fundamental right to consent to sexual activity, they also have the right to know and consent to the substances they ingest. Furthermore, while the discussion of drugging often is focused on female victims, 21% of victims of drugging in our study were male. Future research should examine both men's and women's experiences. Clearly, much more research needs to be done to further knowledge of this phenomenon. The current study is a first step toward developing this line of research.

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Received May 22, 2015
Revision received April 7, 2016
Accepted April 8, 2016 ■

Members of Underrepresented Groups: Reviewers for Journal Manuscripts Wanted

If you are interested in reviewing manuscripts for APA journals, the APA Publications and Communications Board would like to invite your participation. Manuscript reviewers are vital to the publications process. As a reviewer, you would gain valuable experience in publishing. The P&C Board is particularly interested in encouraging members of underrepresented groups to participate more in this process.

If you are interested in reviewing manuscripts, please write APA Journals at Reviewers@apa.org. Please note the following important points:

- To be selected as a reviewer, you must have published articles in peer-reviewed journals. The experience of publishing provides a reviewer with the basis for preparing a thorough, objective review.
- To be selected, it is critical to be a regular reader of the five to six empirical journals that are most central to the area or journal for which you would like to review. Current knowledge of recently published research provides a reviewer with the knowledge base to evaluate a new submission within the context of existing research.
- To select the appropriate reviewers for each manuscript, the editor needs detailed information. Please include with your letter your vita. In the letter, please identify which APA journal(s) you are interested in, and describe your area of expertise. Be as specific as possible. For example, "social psychology" is not sufficient—you would need to specify "social cognition" or "attitude change" as well.
- Reviewing a manuscript takes time (1–4 hours per manuscript reviewed). If you are selected to review a manuscript, be prepared to invest the necessary time to evaluate the manuscript thoroughly.

APA now has an online video course that provides guidance in reviewing manuscripts. To learn more about the course and to access the video, visit <http://www.apa.org/pubs/authors/review-manuscript-ce-video.aspx>.