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## A Qualitative Investigation Comparing Psychosocial and Physical Sexual Experiences Related to Alcohol and Marijuana Use among Adults

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### Abstract

Alcohol and marijuana are two of the most prevalent psychoactive substances and each may result in distinct psychosocial and physical sexual experiences and different sexual risk behaviors. With marijuana becoming more accepted in the US along with more liberal state-level policies, it is important to examine and compare users' psychosocial and physical sexual experiences and sexual risk behavior associated with these drugs. In this study, we interviewed 24 adults who recently used marijuana before sex. Participants were 50 % female and all self-identified as heterosexual and HIV-negative. Using thematic analysis, we compared self-reported psychosocial and physical sexual experiences of alcohol and marijuana. Participants described differences between drugs with regard to psychosocial (e.g., partner interactions and contexts before sex, partner choice, perceived attractiveness of self and others, disinhibition, and feelings of regret after sex) and physical sexual experiences (e.g., sexual dysfunction, dose effects, sensations of body/sex organs, length and intensity of sex, and orgasm). Alcohol use was commonly associated with social outgoingness and use facilitated connections with potential sexual partners; however, alcohol was more likely than marijuana to lead to atypical partner choice or post-sex regret. Both alcohol and marijuana had a variety of negative sexual effects, and the illegality of marijuana reportedly facilitated intimate encounters. While sexual experiences tended to be similar across males and females, we did find some variation by gender. Results can inform prevention and harm reduction programming that will allow us to design more realistic programs and to craft interventions, which guide potential users to make safer choices.

### Keywords

Marijuana; Alcohol; Risk behavior; Orgasm; Sexual dysfunction

## Introduction

Cannabis (marijuana) use and approval toward use have recently increased in the US (Johnston, O'Malley, Bachman, Schulenberg, & Miech, 2014). The majority of adults in the US now support marijuana legalization (Motel, 2014; Palamar, 2014; Palamar, Ompad, & Petkova, 2014b), four states and the District of Columbia have legalized recreational use, and at least 24 other states have legalized medical marijuana or decriminalized recreational use. Correlational studies have linked marijuana use to risky sexual behavior (e.g., Castilla, Barrio, Belza, & de la Fuente, 1999; Kingree & Betz, 2003; Smith et al., 2010), but richer data are needed to investigate these associations. Since the landscape is changing, and marijuana continues to increase in popularity; research is needed to continue to examine if and how marijuana use may influence risk for unsafe sexual behavior. A novel method is to compare the psychosocial and physical sexual experiences of marijuana to the experiences related to the most prevalent intoxicating substance—alcohol.

Nationally, two-thirds of 18-year olds have consumed alcohol and half of 18-year olds report ever being drunk (Johnston et al., 2014; Miech, Johnston, O'Malley, Bachman, & Schulenberg, 2015). Risky drinking increases throughout young adulthood (age 19–28) with 64 % of young adults getting drunk in the last year. Likewise, in 2013, nearly half (44 %) of 18-year olds reported using marijuana in their lifetime and 35.1 % reported use in the last year. Roughly two-thirds of adults have used marijuana by age 30 (Johnston et al., 2014; Miech et al., 2015).

A robust literature suggests that drinking—particularly binge drinking—places individuals at risk for engaging in high-risk sexual behaviors (e.g., Pedrelli et al., 2011; Tran, Nehl, Sales, & Berg, 2014). Alcohol has been shown to diminish both social and sexual inhibitions (Coleman & Cater, 2005), and it is also commonly used to boost confidence and to cope with emotions such as fear of rejection by potential sexual partners (Lewis et al., 2008). Coleman and Cater conducted a qualitative study and found that alcohol consumption tends to alter perception of potential partner's attractiveness. They also found that alcohol is often used as an “excuse” for certain sexual behaviors; it impairs judgment (e.g., ability to detect a risky situation), and use can lead to a loss of control (e.g., blacking out). Alcohol consumption is often associated with high-risk sexual behaviors, such as unplanned sex, having casual sex, multiple partners, and a decrease in protective behaviors (e.g., condom use) (Cooper, 2002; Dermen & Cooper, 2000; Mutchler, McDavitt, & Gordon, 2013; Rehm, Shield, Joharchi, & Shuper, 2012; Townshend, Kambouropoulos, Griffin, Hunt, & Milani, 2014). Findings from an older national survey of more than 17,000 college-age students found that heavy drinkers were nearly three times as likely to engage in these types of behaviors (Wechsler, Dowdall, Davenport, & Castillo, 1995). Alarming, about half (46 %) of acquaintance rapes have occurred when one or both parties have been drinking alcohol (Lanutti & Monahan, 2002). Hingson, Zha, and Weitzman (2009) found that every year roughly 97,000 students between the ages of 18 and 24 are victims of alcohol-related assault or date rape.

While extensive research has been conducted on the sexual risks associated with alcohol use, less research has focused on how marijuana use impacts sexual behavior. Many studies link

marijuana use to sexual risk behavior, but often in an indirect, correlational manner. For example, many studies suggest that individuals who have used marijuana (e.g., in the last year) tend to report having had more partners (Bedoya et al., 2012; Brodbeck, Matter, & Moggi, 2006; Castilla et al., 1999; Poulin & Graham, 2001; Tyurina et al., 2013), or report engaging in sex without a condom (Castilla et al., 1999). Some studies have even concluded that marijuana use may be riskier, sexually, than alcohol (Kingree & Betz, 2003; Kingree, Braithwaite, & Woodring, 2000). Few studies, however, have examined the psychosocial and physical sexual experiences related to marijuana use, and to our knowledge, no empirical studies have compared alcohol and marijuana with regard to potential psychosocial and physical sexual experiences, which in turn may affect (risky) sexual behavior. Likewise, to our knowledge, no qualitative studies of marijuana use have focused on the details of sexual effects or sexual interactions, or to the situations prior to sexual encounters, and this information is needed to help inform prevention and harm reduction. Despite increasing use and major policy changes, research on marijuana-related psychosocial and physical sexual experiences is limited. Continued research on the sexual effects of marijuana is warranted because more individuals may become at increased risk for potential adverse sexual outcomes in light of increasing popularity. Here we aim to compare psychosocial and physical sexual experiences (in a qualitative manner) to inform prevention in a time that marijuana use is gaining prevalence and acceptance.

## Method

### Participants

We interviewed 24 adults who were recruited online via Craigs-List in New York City. Eligible participants (1) were ages 18–35, (2) spoke English; (3) must have engaged in sexual intercourse while high on marijuana within the last 3 months, and (4) must have engaged in sexual intercourse within the last 3 months while not high on marijuana. Reporting use of other illicit drugs in the last 3 months was exclusionary. Sex was defined as any sexual activity (involving some form of genital contact) with another individual that can result in orgasm in either individual. HIV serostatus and sexual orientation were not inclusion criteria.

Sample demographics are presented in Table 1. The sample was 50 % female, 10 (42 %) identified as White, 11 (46 %) Black, and 3 (12 %) identified as Hispanic. The mean age was 27.4 years ( $SD = 5.8$ ) and marijuana had been used on average of 10.1 years ( $SD = 6.7$ ). All participants self-reported being HIV-negative and heterosexual.

### Measure and Procedure

The sample was stratified by sex and a male research assistant (RA) interviewed male participants and a female RA interviewed female participants. Data for this study were collected via in-depth interviews using a semi-structured interview guide. Following the conventions of Grounded Theory (Strauss & Corbin, 1990), we a priori set a number of predefined core questions, and the interview guided RAs to ask about additional topics that arose. When possible, the trained RAs probed for details and elaboration. This analysis focuses on a series of question sat the end of the structured interview, which focused on

comparisons between marijuana- and alcohol-related psychosocial and physical sexual experiences. Specifically, participants were asked open-ended) to compare what sex is like on alcohol compared to sex on marijuana. The interviewers also used a series of probes to follow-up on factors of interest not discussed by the participant (probes listed in Table 2). Interviews were recorded and professionally transcribed.

### Data Analysis

Analysis of transcripts focused on identifying patterns based on the entire sample using a multilevel process (Miles & Huberman, 1994). Two raters independently coded text into relevant topics/categories, which were largely predetermined by the structured interview questions. Dominant and repeated codes were then categorized into themes. Quotations that fit with specific topics and themes were then cataloged to form a comprehensive picture. After a consensus was reached regarding occurrences and classification of codes and themes, quotations in each domain were summarized. Data were analyzed utilizing Atlas.ti software. Since this was a relatively small sample, results are highly descriptive in nature (Sandelowski, 2000). Despite the relatively small sample size, when possible we examined whether there were potential differences by gender.

### Results

We classified our codes into three themes—psychosocial experiences, physical experiences, and behavior. We first present and compare self-reported psychosocial experiences as the majority relate to situations prior to the physical sexual encounter(s).

#### Psychosocial Experiences

**Self-Perception of Attractiveness**—Participants often described themselves as feeling more attractive after use of alcohol or marijuana. Many participants—males and females—reported feeling sexier after use of marijuana, but this was more commonly related to use of alcohol. While many participants noted that they see others as being more attractive while they are on alcohol or marijuana (discussed below in the *Partner Choice* section), some mentioned that feeling more attractive or sexy after use (particularly of alcohol) increased the likelihood of having sex with individuals with whom they would not normally have sex. One female stated: she felt so attractive on alcohol that she feels she is the “diva of the party,” yet another stated: she felt like the “sexiest woman on the planet” while high on marijuana. So both drugs appear to be potentially associated with increased feelings of self-attractiveness, but possibly more so for alcohol.

When I’m drunk, I’m drunk, so I’m like, “I’m hot.” Then with weed, I usually feel more sexy...and happy. You usually feel a little sexier, a little bit more turned on and ready to have sex, instead of being self-conscious.

(Female, White, 32)

When I’m drinking...I feel like I’m the prettiest person in the world, like no one has anything on me. I’m just so confident.

(Female, Hispanic, 26)

While males also tended to suggest feeling more physically attractive, one male suggested that the confidence he feels from alcohol is what he feels makes him more attractive. Similarly, with regard to marijuana, one male mentioned that smoking marijuana makes him attractive because it makes him more relaxed, nonchalant, and less needy, and another mentioned females tell him he is sexy during the act of smoking marijuana. However, one male mentioned that while drinking helped numb his insecurities, smoking could actually increase his body image issues. Although the same male pointed out that “acting stupid” and blacking out on alcohol could make one appear unattractive, which he compared to the “less-unattractive” characteristic of having squinty eyes on marijuana.

**Sociability and Loss of Social Inhibitions**—When discussing situations that preceded potential sexual encounters, some participants compared the feelings of sociability associated with use of alcohol versus marijuana. For instance, although some participants reported feeling more talkative on marijuana, use was commonly discussed as actually leading users to feel quieter and less social than usual. Alcohol, however, tended to make participants—both males and females—more outgoing and social.

I don't feel as outgoing (on marijuana). I don't want to hold a conversation and stuff like that. Whereas if I'm drunk, I talk to anybody.

(Male, Black, 18)

I'm quiet, but it (marijuana) makes me laugh more, and I guess when you laugh, it makes people want to socialize with you. I feel like when you're drunk, you're down for everything.

(Female, White, 19)

Thus, in some respects, alcohol—particularly in larger doses—may serve as a more effective social lubricant than marijuana. Not only did some participants high on marijuana report not talking because they were “staring at the clouds” or not feeling social, but some noted being more selective in group situations.

When I'm high I'm a people person, but I'm selective. When I drink, I don't mind being in a crowd of people. There's times I'd be high, and I go to a party, and I'll pick this guy or this girl. But when I'm drunk, I'm just going to mingle with everybody.

(Male, Black, 35)

Most participants felt that alcohol made them more socially disinhibited than marijuana. In fact one male participant referred to alcohol as “liquid courage.” A clear difference between alcohol and marijuana was that many participants stated that alcohol use can lead to more “aggressive” social behavior than marijuana, which reportedly tends to make users feel more laid-back, “chill,” relaxed, mellow, and/or that they and everyone else feels happy. The “aggressive” behavior associated with alcohol use seems to apply more to males, however.

When there's drinking involved, guys seem to get more belligerent and crazy, and get this weird aggressive energy...-Maybe I'm looking for it (sex) more if I were drunk, whereas when I'm high, I'm happy doing other things. Sex is great.

Watching a movie is great. Resting's great. But when I'm drunk, fucking would be great.

(Female, White, 31)

Some participants reported that on alcohol they have a willingness to “do anything,” say things they normally would not say (“without a filter”), or “say yes to people” (regarding sexual behavior). However, females were more likely to discuss this in terms of being more “adventurous,” as compared to the boldness or confidence described by some males. Others reportedly feel rowdy and “all over the place” on alcohol, but this was often discussed with a negative connotation. But despite the confidence commonly associated with alcohol use, some participants implied that marijuana use is accompanied with a sense of wariness in unfamiliar situations that participants did not generally seem to experience after using alcohol. For example, one male user reported that while he felt “loose” on marijuana, he noted that users maintained a sense of intuition on it that they did not experience on alcohol.

It feels like you get a lot more primal (on alcohol)...maybe you get horny or something. Like “I need this,” and I'm just going to do whatever. But being high—it's not something like you're like, “Oh, I need to go out and get some girls.”

(Male, White, 27)

When I'm drinking, I want to do anything. I'm up for anything. Not thinking, alright, this is probably not going to be good the next day. But at that moment, you're not worried about any of that stuff.

(Female, Hispanic, 26)

**Facilitation of Social Connection with Others**—While these two substances reportedly affected social inhibitions, some participants also discussed how alcohol or marijuana were often used in different social situations in order to promote or facilitate sociability. In fact, both marijuana and alcohol were often reportedly available at gatherings and/or provided by others. In general, alcohol use was often provided in social situations to facilitate sociability, and some reportedly drank alcohol in order to loosen up to meet new people. Marijuana, however, was often discussed as being limited to more familiar situations or crowds—not gatherings full of strangers. In addition, not only do many attendees at gatherings drink alcohol to facilitate socialization, but there are also common social rituals or methods or social bonding involving the serving or consumption of alcohol such as buying someone a drink, toasting, and taking shots with others.

Although often used at different types of gatherings, some participants reported that sharing marijuana with someone who asked for a “hit” also tended to facilitate connections between users; thus, sharing the substance appears to influence the social effects associated with actual use of the substance. For example, some males reported smoking at concerts or parties and having women approach them asking to blow smoke in their faces. An intimate form of doing this is via “shot-gunning” in which someone places his or her mouth on another person's mouth and blows smoke in. Thus, both substances are sometimes used to facilitate social connections—with users taking advantage of direct pharmacological effects as well as

social rituals—and results suggest that for both alcohol and marijuana—males appear to be more likely to initiate the sharing ritual with women.

When you're drinking, and you know the other person is drinking, you can always be like, "Let's get another drink." There is always that connection.

(Male, White, 23)

Usually the way I meet people is I'm smoking, and they ask for a hit. There have been countless numbers of people that I have met just by, "Can I get a hit of that?" I think marijuana creates a common interest.

(Male, Black, 23)

However, while some participants reported that marijuana was an effective "ice-breaker" for meeting others at certain parties, using with others in private (e.g., at a residence) was more common (as it is an illegal substance with a strong odor). In fact, the "taboo" or "forbiddenness" of use being illegal appeared to have facilitated sexual interactions when using marijuana with another individual in private—and both males and females reported asking someone of the opposite sex to come smoke marijuana in order to help facilitate a potential intimate encounter.

When I'd go on a date, if it went well, I'd be like, "Want to come back to my place and smoke weed?" That's a great transition into the intimacy of being at my house. "Let's do something a little bit taboo together." And then it's like you're sharing a sensation that's a little bit forbidden. Also, maybe just the fact of it being illegal and you have to do it privately...it seems kind of exclusive. It feels more intimate.

(Female, White, 31)

I was probably thinking that this (marijuana) might increase the chances that we are going to have sex. This would be fun, and we're already sort of in this intimate experience anyway...in my room in college smoking weed.

(Male, White, 27)

However, this method does not appear to be successful unless both individuals are users. For example, two participants (one male and one female) alluded to experiencing stigma when the other (non-using) individual found out that he or she was a marijuana user. So disclosing that one is a user may place one at risk of a stigmatizing situation, although if the other individual is a user it may facilitate a more intimate social encounter.

**Partner Choice**—While both substances were often noted to affect the types of potential partners participants approached, they overwhelmingly reported that alcohol use was more likely to (negatively) affect the partners they chose. Seeing partners "in the daylight" for the first time and waking up next to a "different person" was a common complaint of both males and females—for example, they felt attracted to the individual the night before, but not the morning after sex. Alcohol use commonly lowered participants' standards, possibly because as one male participant pointed out—he becomes more desperate or "less picky" on alcohol. Males were more likely than females to discuss lowered standards of partner choice in terms

of appearance, although some females also implied that they were not physically attracted to their partner the following day.

There have been times where I've had alcohol and have hooked up with girls who I wouldn't normally have when I was sober. I think alcohol makes me give less of a fuck than marijuana, but marijuana—it makes me selective in who I choose to have sex with, or, pursue.

(Male, Black, 20)

Whoever comes your way...when I'm drinking, everybody looks fine to me. Everybody looks good, and then if you wake up with somebody in the morning, then you'll be like, "Am I bugging out?" With weed I know who I'm waking up with. With drinking, you don't know. Once you start drinking, everybody looks good.

(Female, Black, 34)

When you're drunk, you might be like, "Damn, he looks mad good." Then you wake up, you're like, "What the hell did I do? Why are we naked in my bed?" I think if it was weed only I would've been, "Maybe this is a good stopping point."

(Female, White, 31)

In many cases, females' "bad" decisions seemed to transcend appearance. Females in particular were more likely to report false interpretations not only about appearance or attractiveness, but also about the partner's character (e.g., career choices). One female mentioned that she continued to perceive a connection with someone (after meeting while inebriated on alcohol); however, on their first (sober) date, she experienced feelings of awkwardness and lack of compatibility. Social awkwardness (e.g., the next day after meeting while inebriated) sometimes resulted from other social issues not experienced or acknowledged while drunk. For example, lack of more meaningful (e.g., sober) conversation during an initial meeting may not lead individuals to discuss (or perhaps recall) potentially sensitive topics such as political affiliation or plans to start a family. One female said she was not attracted to her partner in the morning—not because she found him unattractive—but because he did not remember a long conversation they had about her career. Another female reported that while she felt complimented by "cheesy pickup lines" when drunk, she did not appreciate them the following day when she was sober.

Although generally most participants did not report lowering their standards on marijuana (compared to alcohol), some did explain that they found their partners more attractive while high. A couple of participants articulated differences—for example, one male stated that marijuana can enhance a potential partner's attractiveness (e.g., highlighted facial features) as well as one's surroundings, but on alcohol, they felt one was more likely to settle for someone he or she was not normally attracted to. Another participant mentioned that he became more emotionally attracted to his girlfriend on marijuana and no participants reported such an "emotional" attraction with regard to alcohol. In addition, many participants discussed attraction or sex on marijuana as being with someone they already knew—or were dating (adding to the point discussed above that marijuana is most often used with familiar individuals). Alcohol was commonly discussed in terms of having sex



with strangers (or someone new); thus, situations involving sex on marijuana tend to be much different than situations involving alcohol in which individuals commonly meet strangers in social settings such as bars. However, some marijuana users—male and female—were also more likely to lower their sexual standards when high on marijuana.

I've come to realize that somebody that I wouldn't normally fuck while I was sober, I probably would fuck them while I was high.

(Male, Black, 35)

When I'm high...the people I'm attracted to, I'm not at all attracted to sober. My partners are hotter if I've been drinking [laughs]. [They] should be called "weed goggles" because it's much worse on marijuana than on alcohol.

(Female, White, 22)

Although reports of lowering sexual standards varied, one participant noted a hierarchy—that marijuana lowers one's standards more than being sober, and alcohol lowers one's standards more than marijuana. In sum, it appears that many individuals were likely to be more attracted to certain potential partners on either drug, but this appeared to be more of a "risk" with alcohol.

**Feelings After Sex**—Many participants reportedly experienced impaired memory regarding sexual interactions when alcohol was involved, or having sex with partners they did not previously know. This often led to reclusiveness and some participants even reported being "cold" to their partner in the morning. One female noted awkwardness upon accidentally bumping into that partner in the future. However, some participants mentioned that they were more satisfied after interactions on marijuana compared to interactions on alcohol, and this could largely be due to different social interactions beforehand.

I feel like when you're drunk you can't remember what happened the next day. But when I'm high, I remember everything.

(Female, White, 19)

I want to cook the person something to eat (after sex) when I'm high. When I'm drunk, it's like, "I'm out of here." Or get away from me.

(Male, White, 33)

A male and a female both reported desire for more sex after the first sexual episode on marijuana—a desire that does not reportedly return as often after sex on alcohol. Some participants reported feeling more satisfied after their encounters high on marijuana (compared to alcohol), and more relaxed, "chill," emotionally at ease, and able to fall asleep.

**Regret**—The most commonly reported feeling after sex on alcohol was regret. Both male and female participants reported regret resulting from a range of behaviors including one-night stands, "hooking up with drunk chicks," the lowering of sexual standards, and specific risky sexual interactions such as using the withdrawal method instead of a condom. Participants discussed worry about pregnancy, and one participant mentioned disappointment that he could not remember a particular sexual episode. Both males and

females commonly reported that regret, shame, and embarrassment were associated with alcohol use, but this was rarely reported for marijuana. One female added that she is more likely to regret the partners she chooses on marijuana; however, she said she is more likely to regret specific sexual acts on alcohol. For example:

When you're drunk, it's more regrets or I-wish-I-didn't-do-that type of thing. Definitely had times where I didn't use a condom. Pulling-out method, one-night stands...Just didn't feel good about that at all.

(Female, White, 32)

In addition, we found that females tended to report regret in the form of shame for allowing themselves to have sex with someone they feel they would not have had sex with while sober:

You might wake up next to someone you never intended on doing anything with them, just because you didn't have control and you were drinking so much. I was actually, the next day, thinking, what did I do?

(Female, Hispanic, 26)

When you're drunk, you might see somebody and be like, damn, he looks mad good. Then you wake up, you're like, oh, what the hell did I just do?

(Female, Black, 25)

However, males tended to report regretting the women they pursued and then had sex with:

It's almost like a shameful experience (from alcohol). I don't think I've had that same kind of experience with marijuana. It's doesn't really lower inhibitions the same way, so I don't think I'm as likely to do something that I know I'm going to regret

(Male, White, 27)

Oh, so much regret for alcohol. Sometimes I hook up with girls I wouldn't normally have while sober. I feel like weed only enhances the attraction and the connection, but with alcohol, there's lots of regret. Lots of embarrassment.

(Male, Black, 20)

I never had no regret on marijuana. Yeah, sometimes alcohol. You like, "Why the fuck I even touch this bitch?" I mean, sometimes I wake up, and I'm just like, "Wow, I could've done better than that." With weed, I never had that experience.

(Male, Black, 30)

So both males and females tended to report regret after having sex on alcohol. But as previously noted, some participants feel they remember more (or everything) from sex on marijuana, and adding to this point—one participant made an interesting comparison saying that you are more likely to want to remember sex on marijuana, unlike alcohol where you hope to forget if you have not forgotten already.

## Physical Experiences

**General Adverse Effects**—Nausea, dizziness, feeling sick (and vomiting), and blacking out were commonly reported to be associated with alcohol use. One male reported accidentally falling asleep during intercourse and another male reported having to urinate due to alcohol consumption as interfering with sex (in part because it can be difficult for a male to urinate with an erection). It appears that reported adverse alcohol experiences tend to be more physical, but adverse marijuana experiences reported tend to be more psychosocial—as one participant summarized: “I feel like weed affects your motivation, and alcohol just affects your ability.”

I’ve had a couple of times in the middle of intercourse (on alcohol) where I’ve had to stop and go hurl. But I came back and whatever. Maybe it’s taking a little while longer for me to get my erection again, but five times stronger than before I threw up.

(Male, White, 33)

However, adverse non-sexual experiences were certainly not limited to alcohol. For example, one male noted feeling sluggish, lazy, and sleepy after smoking marijuana. Yet this depressant effect may be more extreme with alcohol. For example, one female stated that if she drinks too much she may fall asleep instead of having sex.

**Dose Effects**—Sexual experiences—especially adverse experiences—appear to depend on the dose used. Many adverse experiences reported thus far have been discussed in the context of somewhat high doses (e.g., being drunk). Low doses of alcohol (e.g., 1–2 drinks) reportedly allowed some participants to be able to function rather adequately. A few participants reported that higher alcohol consumption often led to erectile dysfunction and vaginal dryness.

Or if you drink too much, it’s like your body just shuts down. I don’t get any lubrication. Then I think it might even affect guys more, because I’ve been in situations where they’ve drunk too much and they can’t stay hard, or they can’t get hard.

(Female, White, 22)

Higher levels of alcohol consumption also reportedly led to more aggressive sex (e.g., regarding initiation), or “reckless” or unprotected sex. In comparison, many participants—male and female—reported that using too much marijuana was associated with anxiety. While “sexual laziness,” reluctance to change sex positions, and even “passing out” were mentioned, many males and females reported that marijuana has an adverse effect on their mindset during sex. Specifically, females were more likely to describe anxiety in the form of paranoia, yet males were more likely to discuss these effects in terms of having their minds drift and having an experience with less-paranoid intrusive thoughts or distraction.

You’re so high (on marijuana)...you start thinking sex is weird. “What is sex?” Sometimes you’re so high that you get the smallest thing in your head, and you get lost in that...I’ve definitely blacked out (on alcohol), probably during sex.

(Female, White, 32)

I guess there maybe is a drop-off where you get too high (on marijuana), and things are a little too intense. Being really high can sort of interfere because then you just get a little too trapped in your head; you tend to get a little more anxious.

(Male, White, 27)

However, the mental effects associated with higher doses of marijuana were not always described in a negative manner; for example, one male reported “spacing out” after smoking too much marijuana, but he stated he felt it ultimately led him to last longer during sex.

**Sensations of Body and Sex Organs**—Participants commonly described sexual experiences with these substances in terms of sensations. Generally, participants described their bodies as more sensitive on marijuana and numb or desensitized on alcohol. A few females noted that increased sensitivity (or being more “tuned-into” their sensations) on marijuana added to the sexual experience as touch felt better or they felt more (physically—which is why some said they preferred being caressed while high). Others mentioned that they felt more comfortable, mellow or at ease on marijuana, which may have allowed sensations to feel more intense.

Alcohol tends to be a lot more numb. Everything is sort of blunted and muted, whereas with marijuana it’s intensified. Any little touch is more arousing. The body sensations, particularly on sexual organs—it’s more of an intense sensation. I’d say everything just feels more sensitive...it’s more intense. Even just foreplay and touching and holding each other is more pleasurable. So they are opposites.

(Male, White, 27)

Other females explained that they experienced a tingly sensation on marijuana, goose bumps, or warm sensations. One male also mentioned feeling tingly “on the inside” during sex on marijuana. While most participants discussed increased body sensitivity as a positive aspect of use, one female noted that increased sensations were not always comfortable. Regardless, alcohol tended to numb sensations and marijuana tended to enhance sensations, and the sensations described above appear to be related to length and intensity of intercourse, which is described below.

**Length and Intensity of Sex**—In many cases, the desensitization associated with alcohol reportedly resulted in prolonged intercourse—in both males and females, and this was often described in a positive manner. Some participants reportedly enjoyed aggressive and intense sex associated with alcohol use; however, one female (below) describes how lengthy sex on alcohol can become painful.

When you’re drinking, it’s like the guy won’t reach his climax. It was great because it lasted like an hour and a half. He wants to keep going, [but] to the point where I’m all swollen and sore. You’re going to have to switch it up, or do some oral...it begins to get painful. I like the fact that he lasts longer, but he sometimes lasts too long. Compared to when you’re high—it feels so great and it might be a little shorter.

(Female, Hispanic, 26)

Likewise, it was mentioned that the feeling of time can slow down on marijuana, so sex feels as if it lasts longer. For example, one female noted that intercourse might feel like an hour on alcohol, but may only be 15 min. Regardless, some males said sex lasts longer on marijuana—possibly due to increased sensitivity, pleasure, and/or emotional intensity. On the other hand, however, a few participants also noted that since sex on marijuana can feel so intense, they orgasm much quicker (than on alcohol).

It's better being high—the sex, but it's less time. I like it to be longer, but still feel great about it.

(Female, Hispanic, 26)

Another added that the overall sex act did last longer on marijuana, but due to increased foreplay—not actual intercourse.

**Sexual Dysfunction**—Some participants compared alcohol and marijuana in terms of sexual dysfunction. The most common dysfunction discussed was that males commonly become impotent or “less erect” after too much alcohol (“whiskey-dick;” a complaint by both sexes).

It's harder to get hard when I'm drunk. So, alcohol, too much, definitely makes you dysfunctional. Weed, I don't think so. It only affects your motivation.

(Male, Black, 20)

Some females, on the other hand, reported that they sometimes experience lack of vaginal lubrication after using marijuana, and this dysfunction was also mentioned by a male in the sample.

I think I don't get as naturally lubricated when I smoke...and I don't think I've ever orgasmed after smoking weed and having sex.

(Female, White, 22)

Sometimes when we've been smoking more marijuana, it's harder for her to get wet. It's like the same thing as getting dry mouth, but down there.

(Male, White, 19)

Beyond dysfunction of sex organs, some participants (both male and female) mentioned that alcohol or marijuana use prevented orgasm (discussed more below).

**Orgasm**—As discussed above, alcohol and marijuana use were often perceived to affect the intensity of sex. Likewise, using these substances could also impact orgasm. Some males and females reported that their orgasms were “magnified,” longer, or more intense (with one female noting hot and cold flashes) on marijuana.

The orgasm's more intense (on marijuana). I can feel it more. I'm also not in my head thinking about anything else. So I'm able to be mindful of everything that's happening and nothing intrudes.

(Female, White, 32)

When I'm high, it seems like my orgasms are magnified at least by five times. Much more intense. Hot and cold flashes.

(Female, Black, 34)

With alcohol, it's more like, "Alright, let's do this. Let's get my orgasm." With marijuana it's like, "Okay, let's enjoy the moment. Let's live in the moment."

(Male, Black, 20)

As aforementioned, some participants mentioned sexual dysfunction with regard to orgasm. While some male participants mentioned they may have delayed orgasms on alcohol, others said they could orgasm or orgasm even more frequently on alcohol. On the other hand, some participants mentioned that the drug affected orgasm in a negative manner.

I feel like a lot of the things that can help lead to female orgasm are forgotten when you're high on marijuana. I feel like it requires a degree of focus for me to have an orgasm...I'm never going to have that focus on marijuana. Everything feels better, but I just can't orgasm. [But] it can be harder for me to orgasm when I've been drinking. And my boyfriend, too. Like, he can still get hard, but then it's harder for both of us to finish.

(Female, White, 22)

Some females also reportedly could not orgasm on marijuana due to lack of focus. For others (of both sexes), it reportedly took longer to achieve an orgasm on marijuana, again, possibly due to mindset.

**Sexual Behaviors**—The last theme with respect to "physical" experiences is sexual behaviors. With regard to marijuana use, some participants mentioned that there was often more foreplay and that it tended to be more euphoric (although sometimes "silly"). Some noted that they tended to explore more, sexually, while high on marijuana, and try new behaviors, as they often felt more creative and / or felt more emotion. This led some participants to engage in more self-described "freaky" behavior (such as sucking toes or "licking ass") or "loss of control," while others simply preferred to just "lay on the bottom."

I think the more you smoke, the more lazier you might be, too. Okay, let's just keep it in one position, because we're so high and we don't want to do so much work.

(Female, Hispanic, 26)

Generally, marijuana use tended to be described as leading to more tender, slow, and compassionate sexual acts, and to involve more sensation and sensuality than alcohol.

When I'm a seductress (on marijuana), I kiss. I stroke. I rub. I'm very sensual, as opposed to when I'm drunk—I'm just like, give it to me. Ripping close off.

(Female, Black, 34)

While both drugs reportedly facilitated changes in specific sexual behaviors, alcohol was often more commonly cited in terms of loss of control or acting out of the ordinary, and one participant said alcohol use leads to more experimental or "kinkier" behavior than marijuana, sometimes described as "crossing the line" (e.g., one male says he is more likely

to tell women to “sit on his face”). Sex on alcohol was often described as being more casual and less emotional than sex on marijuana. Likewise, many described sex on alcohol as being more primal, “sloppy,” aggressive and “un-controllable savage” compared to marijuana. One male compared and said that sex on alcohol was more “straight to the point” to achieve quick ejaculation.

When I’m high off of marijuana, it’s more about pleasing my partner and me. You want more out of it, but you also want to give the person more. You want to satisfy the person even more. I guess it’s more gentle. Sex being drunk—it’s more aggressive. Sex on alcohol is more like savage sex. I go in with the mind frame of I’m going to hurt this woman. She’s going to go home and she’s going to tell all her friends. Sex with marijuana, it’s like you want to please the person more so you want to bring more to table.

(Male, White, 33)

When I’m high, I feel more like a seductress. But when I’m drunk, I feel slutty. When I’m a seductress... I’m very sensual, as opposed to when I’m drunk, I’m just like, give it to me. Ripping clothes off. You know when you’re drunk, you’re saying all kinds of things you wouldn’t normally say? You’re willing to try much more new things.

(Female, Black, 34)

It also appears that type of alcohol or marijuana used can lead to different sexual experiences and behaviors. For example, when discussing alcohol-related sexual experiences some participants mentioned specific brands of alcohol and some discussed certain strains of marijuana as having unique sexual effects. This participant discusses sexual experiences related to a particular strain of marijuana:

I smoked some Blue Cheese, and...I was licking ass, doing all kinds of crazy stuff I had never even thought of—sucking toes...then I smoke some regular and I just do the regular.

(Male, Black, 35)

With regard to sexual risk behavior, the majority of participants felt that alcohol was riskier, sexually, than marijuana. Participants noted that sometimes “anything goes” (sexually) when they drink and are not worried about potential consequences while in the moment. Perceived riskiness of sex was largely due to reported perception of impaired judgment and lack of control of decisions and actions. Use was reportedly often associated with hasty decisions; for example, not using a condom. One male participant said that when he was drunk he sometimes thought, “Who cares about protection?” However, unprotected interactions were not always intentional. One female mentioned that she was too drunk to notice that her partner removed the condom during sex. In some situations, drinking appears to have left participants more vulnerable; for example, one female discussed being subject to sexual assault (unwanted choking) that she described as being too drunk to prevent.

I don’t think being high has ever made me more likely to do anything I consider risky. Being drunk probably affected my experience with risky sexual behavior far more. I’d be more likely to forego using protection with some one I really didn’t

know all that well for gratifying that immediate impulse. With weed, I don't think it's really had much of a bearing on my choice of using protection.

(Male, White, 27)

Even when I smoke weed, if I'm high on weed, I'm still able to make good decisions. It doesn't impair my judgment. Alcohol impairs your judgment, so that's the difference.

(Female, Black, 30)

(Sex is) more riskier with the alcohol. "Who cares about protection" or whatever. You don't think about safety a lot when you're drunk. You just don't think about it some-times until the next day. And then you're like, "Oh shit, did I have unprotected sex?"

(Male, White, 33)

Blacking out was also commonly reported by both sexes, or memories of the interaction were jumbled or unclear, with participants unsure whether they used birth control. One female noted that she resorted to taking Plan B the next day due to what she felt was a poor sexual decision. One participant mentioned that she does not always have the autonomy to resist or speak out against a particular sexual act when high on marijuana. Although others reported delayed reactions and noted that reactions (e.g., to potentially unwelcome behaviors) were not as delayed on alcohol. However, participants often explained that they still felt in control of the situation. A false sense of perceived control, though, could in fact leave a user more vulnerable to unwanted sexual acts. But numerous participants felt that they were still able to make good decisions on marijuana and maintain self-control, more so than when intoxicated with alcohol. Additionally, some participants reported that marijuana did not adversely affect memory of the interaction compared to alcohol. One participant felt that marijuana use was no riskier—sexually—than when sober, and one participant interestingly pointed out that marijuana use decreased his likelihood of engaging in risk behavior because while high he was too paranoid to give in.

## Discussion

With the popularity of marijuana increasing in the US, and with marijuana becoming legal in some jurisdictions, it is important to investigate the potential sexual effects associated with use, in order to inform prevention and safer choices among users and potential users. Correlational studies have linked marijuana use to risky sexual behavior, but richer data were needed to investigate these associations. Few studies have examined the psychosocial and physical sexual experiences related to marijuana use, and to our knowledge, no empirical studies have compared alcohol and marijuana with regard to potential psychosocial and physical sexual experiences, which in turn may affect sexual risk behavior. We compared psychosocial and physical sexual experiences to inform prevention in an era where prevalence of use and acceptance of marijuana are increasing. We categorized topics into two overall themes—psychosocial sexual experiences and physical sexual experiences. We were able to uncover differences between alcohol and marijuana through in-depth interviews that can inform future studies as well as prevention and harm reduction efforts.



With regard to psychosocial experiences, participants commonly reported self-perception of attractiveness or sexiness associated with use of alcohol and marijuana, but more so for alcohol. Parsons et al. (2004) also found that men who have sex with men tend to feel sexier after consuming alcohol and this may facilitate sexual expressiveness, but to our knowledge, this had not yet been investigated in a heterosexual population or with regard to marijuana use. It appears that both substances facilitate feelings of self-attractiveness, but more research is needed to examine whether this directly affects risky sexual behavior. Quantitative studies tend to examine odds or risk for sexual risk behaviors in relation to substance use (e.g., Kerr, Washburn, Morris, Lewis, & Tiberio 2015), but do not examine how psychosocial variables, such as feeling sexy or attractive, may mediate or moderate these associations. Such data could help guide messaging for harm reduction interventions.

While we discovered some variations with regard to gender, both alcohol and marijuana were generally associated with sociability, loss of inhibitions, and feelings of boldness. However, alcohol use was more commonly used for pursuing potential sex partners. Participants often reported feeling a loss of control with alcohol, whereas with marijuana, they tended to feel they maintained control, but were reportedly often quieter and less social than usual. Alcohol is commonly used to boost confidence, decrease social inhibitions, and to cope with emotions such as fear of rejection by potential sexual partners (Lewis et al., 2008; Parsons et al., 2004); however, participants did not report these reasons with regard to marijuana use. Participants also tended to discuss disinhibition on alcohol in terms of being “sloppy,” yet they felt more controlled while high on marijuana. Our results confirm that alcohol is an effective social lubricant and past research has found that it diminishes anxieties about how potential sexual partners might respond (Livingston, Bay-Cheng, Hequembourg, Testa, & Downs, 2013; Parsons et al., 2004). This disinhibition on alcohol helped facilitate a social connection with others, but again, alcohol reportedly served as a more effective social lubricant than marijuana in social settings. Participants—especially males—on alcohol reportedly felt more social, outgoing, and courageous in approaching others—facilitating a potential sexual encounter.

Although males were more likely to pursue women on alcohol, females were more likely to report “accepting” potential sexual partners when inebriated on alcohol. On marijuana, participants tended to feel quieter and less social; however, a major finding of this study was that the illegality of marijuana sometimes facilitated sexual interactions as participants felt they were engaging in “forbidden” or “taboo” behavior—among both males and females. While consumption of alcohol in public is legal (but regulated) with individuals able to drink in public or in private, marijuana is generally used in more private situations (due to illegality in most states). So since marijuana cannot generally be used in public, potential partners are often limited to more intimate settings, thus facilitating potential sexual encounters (while individuals who are drinking do not have to limit themselves to private places). More research will be needed to examine such associations in light of changing legality of marijuana throughout the US.

Participants also discussed alcohol and marijuana in terms of partner choice. While some participants reported that marijuana use made them more selective in choosing a partner, many participants—both male and female—felt that their standards for choosing a partner

were lowered while under the influence of alcohol. Parsons et al. (2004) also found that alcohol often plays a large role in spontaneous sexual encounters as it reportedly lowers partner selection criteria. While we found that participants on alcohol often were no longer attracted to their partner following the encounter, this adds to previous research that has found that alcohol use is related to riskier partner choice (Cooper, 2002; Dunn, Bartee, & Perko, 2003).

Interestingly, some participants reported that marijuana use actually made them more selective in choosing partners. While some reported that they felt more attracted to their partner(s) on marijuana, this effect appears to be different from the alcohol “beer goggles” effect, but possibly because individuals who use marijuana together often already know each other and are in a more private setting together. Partner choice on alcohol appears to largely depend on the social context in which individuals initially meet one another; for example, on alcohol, individuals appear to be more likely to connect with unknown casual partners (Walsh, Fielder, Carey, & Carey, 2014). So if marijuana was legal and used and shared openly in public it is unknown whether there would be a “marijuana goggles” phenomenon associated with use.

Related to partner choice, it was not surprising that marijuana use reportedly led to more post-sex satisfaction than alcohol. Users generally did not feel they experienced memory impairment or poor judgment after using marijuana, but they did feel they commonly experienced this from alcohol. The most common reported feeling after sex on alcohol was regret and regret after sexual interactions on alcohol has been reported in other studies (Livingston et al., 2013). A recent epidemiology study of a nationally representative sample of adolescents found that compared to marijuana, alcohol was much more likely to lead to regretful behavior (e.g., having sex with someone they would not normally be attracted to), especially among females (Palamar et al., 2014a). Our results add to these findings in that compared to marijuana, alcohol use reportedly leads to more regret.

With regard to physical sexual experiences, participants reported adverse effects related to both alcohol and marijuana use. Participants reported nausea, dizziness, and falling asleep during sex on alcohol, but adverse experiences on marijuana were reportedly often more mental (e.g., paranoia and lack of motivation). We must keep in mind that drug dose is likely an important factor relevant to all findings. For example, many experiences on alcohol were discussed in terms of being drunk, so it is unknown whether participants would have had similar experiences on smaller doses. Drug dose likely played a role in other physical experiences participants discussed including body sensations, length and intensity of sex, sexual dysfunction, and specific sexual behaviors.

Alcohol and marijuana reportedly led to different sensations of the body and sexual organs. Participants commonly reported increased sensitivity on marijuana and numbness while on alcohol. These changes in sensation appear to have influenced length and intensity of sex as well as orgasm. While we must keep in mind that both drugs can affect one’s perception of time, participants commonly reported that the numbness associated with alcohol was associated with more extended sexual activity. However, more aggressive sex on alcohol

sometimes reportedly led to sex of shorter duration. Participants reported more intense sexual activity on marijuana and sometimes an increase in duration.

Sexual dysfunction was reportedly associated with use of both alcohol and marijuana. Alcohol use was sometimes associated with an inability to achieve or maintain an erection, and alcohol reportedly made it harder to achieve orgasm in both sexes. Previous studies have found that chronic alcohol abuse leads to higher rates of sexual dysfunction in females including inability to orgasm, lack of vaginal lubrication, and painful intercourse (Covington & Kohen, 1984). While alcohol may increase libido, it does not necessarily increase or allow for optimal performance (Parsons et al., 2004). In fact, alcohol use reportedly made it more difficult to achieve an orgasm in both sexes (which relates to length of sexual encounters previously discussed). Marijuana appeared to have a (negative) effect more on motivation than orgasm; however, use was sometimes reported to lead to vaginal dryness. Consistent with previous studies, participants did not discuss instances of impotence related to marijuana use although some discussed inhibited sexual excitement possibly due to lack of motivation (Johnson, Phelps, & Cottler, 2004; Smith et al., 2010). Ability to achieve orgasm appears to be related to participants' described sexual dysfunction. As aforementioned, length of sex is often extended on alcohol (e.g., due to numbness), and length is often extended because orgasm is delayed. Orgasms were reportedly more intense on marijuana than on alcohol; however, some females reported an inability to achieve orgasm on marijuana due to lack of proper focus.

With regard to sexual behaviors, sex on alcohol was commonly reported as being more casual and less emotional. However, many participants also described sex on alcohol as being more "out of the ordinary" or even "freaky" or "kinky." On the contrary, sex while high on marijuana was commonly described as being more compassionate and it tended to include more foreplay, with many participants experiencing increased sensuality and sensation reportedly related to sex while high on marijuana. Although we were not able to acquire enough data to determine whether participants on marijuana were less likely to use condoms, condomless sex on alcohol was reported as being a somewhat common experience, consistent with Kerr et al.'s (2015) study among college students.

One female also discussed sexual assault (unwanted choking) during an encounter involving alcohol. Alarming, 2 % of college students in the US report being victims of alcohol-related sexual assault or date rape (Hingson et al., 2009). Although few studies document marijuana use in cases of sexual assault, alcohol appears to be particularly problematic (Hall & Moore, 2008; Kerrigan, 2010). Research on both alcohol and marijuana needs to continue in order to inform prevention of sexual assault.

We must also keep in mind that many of the sexual situations related to use of each of these drugs likely depends on contexts of use. For example, a lot of risky or "regretful" behavior occurred with strangers or new partners while participants were inebriated on alcohol, but sex on marijuana was more common with individuals participants already knew.

## Limitations

This was a small study so not enough interviews were conducted to formally compare by race/ethnicity, age, or a amount used. This study's inclusion criteria were based only on marijuana use so participants were not required to have had sex on alcohol in the last 12 months. Likewise, since sex while high on marijuana while engaging in any sexual activity (not strictly vaginal or anal sex) that could result in orgasm was an inclusion criterion, eligible participants in this sample may have engaged in varying sexual acts and different acts may have varying degrees of sexual risk. Different inclusion criteria might have led to a different sample with different experience. While participants all identified as heterosexual, it is important to keep in mind that sexual orientation does not in fact limit one's sexual behaviors to the opposite sex. A larger, more systematic study should consider multiple other factors including relationship status, and as findings suggests, dose appears to be an important factor, so amount used needs to be examined in relation to specific sexual experiences in more detail. For example, adverse sexual experiences on alcohol tended to be described in terms of drunkenness, but research needs to further examine and compare dose-responses. Likewise, larger studies would benefit from directly comparing "critical incidents" involving marijuana and alcohol to truly compare drug effects as well as specific risk behavior (e.g., whether a condom is used) within the same individuals. Many participants were experienced users and extensive experience could have affected sexual effects or expectations of sexual effects. This study is also limited because type or brand of alcohol and strain and strength of marijuana may also lead to different perceived sexual effects. Finally, we realize that this is a relatively small sample, but we hope that this rich data inform large-scale future studies.

## Conclusions

As marijuana use continues to become more normalized in the US, research is needed to inform prevention to ensure that users and potential users of these substances are aware of sexual experiences associated with use. Marijuana and alcohol are associated with unique psychosocial and physical experiences. While alcohol reportedly led to risker sexual behavior, both drugs appear to potentially increase risk for unsafe sex. Research is needed continue to study sexual effects and to inform prevention to ensure that users and potential users of these drugs are aware of sexual effects associated with use. Results can inform prevention and harm reduction programming that will allow us to design more realistic programs and to craft interventions, which guide users to make safer choices.

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## References

Bedoya CA, Mimiaga MJ, Beauchamp G, Donnell D, Mayer KH, Safren SA. Predictors of HIV transmission risk behavior and seroconversion among Latino men who have sex with men in project EXPLORE. *AIDS and Behavior*. 2012; 16:608–617. [PubMed: 21390540]

- Brodbeck J, Matter M, Moggi F. Association between cannabis use and sexual risk behavior among young heterosexual adults. *AIDS and Behavior*. 2006; 10:599–605. [PubMed: 16691461]
- Castilla J, Barrio G, Belza MJ, de la Fuente L. Drug and alcohol consumption and sexual risk behaviour among young adults: results from a national survey. *Drug and Alcohol Dependence*. 1999; 56:47–53. [PubMed: 10462092]
- Coleman LM, Cater SM. A qualitative study of the relationship between alcohol consumption and risky sex in adolescents. *Archives of Sexual Behavior*. 2005; 34:649–661. [PubMed: 16362249]
- Cooper ML. Alcohol use and risky sexual behavior among college students and youth: Evaluating the evidence. *Journal of Studies on Alcohol*. 2002; 63:101–117.
- Covington SS, Kohen J. Women, alcohol, and sexuality. *Advances in Alcohol and Substance Abuse*. 1984; 4:41–56. [PubMed: 6516941]
- Dermen KH, Cooper ML. Inhibition conflict and alcohol expectancy as moderators of alcohol's relationship to condom use. *Experimental and clinical psychopharmacology*. 2000; 8:198–206. [PubMed: 10843303]
- Dunn MS, Bartee RT, Perko MA. Self-reported alcohol use and sexual behaviors of adolescents. *Psychological Reports*. 2003; 92:339–348. [PubMed: 12674302]
- Hall JA, Moore CB. Drug facilitated sexual assault—are view. *Journal of Forensic and Legal Medicine*. 2008; 15:291–297. [PubMed: 18511003]
- Hingson RW, Zha W, Weitzman ER. Magnitude of and trends in alcohol-related mortality and morbidity among U.S. college students ages 18–24, 1998–2005. *Journal of Studies on Alcohol and Drugs*. 2009; s16:12–20.
- Johnson SD, Phelps DL, Cottler LB. The association of sexual dysfunction and substance use among a community epidemiological sample. *Archives of Sexual Behavior*. 2004; 33:55–63. [PubMed: 14739690]
- Johnston, LD., O'Malley, PM., Bachman, JG., Schulenberg, JE., Miech, RA. Monitoring the Future national survey results on drug use, 1975–2013: Volume I, secondary school students. Ann Arbor: Institute for Social Research, The University of Michigan; 2014. [http://monitoringthefuture.org/pubs/monographs/mtf-vol2\\_2013.pdf](http://monitoringthefuture.org/pubs/monographs/mtf-vol2_2013.pdf)
- Kerr DC, Washburn IJ, Morris MK, Lewis KA, Tiberio SS. Event-level associations of marijuana and heavy alcohol use with intercourse and condom use. *Journal of Studies on Alcohol and Drugs*. 2015; 76:733–737. [PubMed: 26402353]
- Kerrigan S. The use of alcohol to facilitate sexual assault. *Forensic Science Review*. 2010; 22:15–32. [PubMed: 26242453]
- Kingree JB, Betz H. Risky sexual behavior in relation to marijuana and alcohol use among African-American, male adolescent detainees and their female partners. *Drug and Alcohol Dependence*. 2003; 72:197–203. [PubMed: 14636975]
- Kingree JB, Braithwaite R, Woodring T. Unprotected sex as a function of alcohol and marijuana use among adolescent detainees. *Journal of Adolescent Health*. 2000; 27:179–185. [PubMed: 10960216]
- Lannutti PJ, Jennifer &, Monahan L. When the frame paints the picture: Alcohol consumption, relational framing and sexual communication. *Communication Research*. 2002; 29:390–421.
- Lewis MA, Hove MC, Whiteside U, Lee CM, Kirkeby BS, Oster-Aaland L, ... Larimer ME. Fitting in and feeling fine: conformity and coping motives as mediators of the relationship between social anxiety and problematic drinking. *Psychology of Addictive Behaviors*. 2008; 22:58–67. [PubMed: 18298231]
- Livingston JA, Bay-Cheng LY, Hequembourg AL, Testa M, Downs JS. Mixed drinks and mixed messages: Adolescent girls' perspectives on alcohol and sexuality. *Psychology of Women Quarterly*. 2013; 37:38–50. [PubMed: 23833392]
- Miech, RA., Johnston, LD., O'Malley, PM., Bachman, JG., Schulenberg, JE. Monitoring the Future national survey results on drug use, 1975–2014: Volume I, secondary school students. Ann Arbor: Institute for Social Research, The University of Michigan; 2015. [http://www.monitoringthefuture.org/pubs/monographs/mtf-vol1\\_2014.pdf](http://www.monitoringthefuture.org/pubs/monographs/mtf-vol1_2014.pdf)
- Miles, MB., Huberman, AM. Qualitative data analysis. An expanded sourcebook. 2. Thousand Oaks, CA: Sage; 1994.

- Motel, S. 6 facts about marijuana. Pew Research Center; 2014 Nov 5. Retrieved from <http://www.pewresearch.org/fact-tank/2014/11/05/6-facts-about-marijuana/>
- Mutchler MG, McDavitt B, Gordon KK. "Becoming bold": Alcohol use and sexual exploration among Black and Latino young men who have sex with men (YMSM). *Journal of Sex Research*. 2013; 51:696–710. [PubMed: 23730733]
- Palamar JJ. An examination of opinions toward marijuana policies among high school seniors in the United States. *Journal of Psychoactive Drugs*. 2014; 46:351–361. [PubMed: 25364985]
- Palamar JJ, Fenstermaker M, Kamboukos D, Ompad DC, Cleland CM, Weitzman M. Adverse psychosocial outcomes associated with drug use among US high school seniors: A comparison of alcohol and marijuana. *American Journal of Drug and Alcohol Abuse*. 2014a; 40:438–446. [PubMed: 25169838]
- Palamar JJ, Ompad DC, Petkova E. Correlates of intentions to use cannabis among US high school seniors in the case of cannabis legalization. *International Journal of Drug Policy*. 2014b; 25:424–435. [PubMed: 24589410]
- Parsons JT, Vicioso KJ, Punzalan JC, Halkitis PN, Kutnick A, Velasquez MM. The impact of alcohol use on the sexual scripts of HIV-positive men who have sex with men. *Journal of Sex Research*. 2004; 41:160–172. [PubMed: 15326541]
- Pedrelli P, Bitran S, Shyu I, Baer L, Guidi J, Tucker DD, ... Farabaugh AH. Compulsive alcohol use and other high-risk behaviors among college students. *American Journal on Addictions*. 2011; 20:14–20. [PubMed: 21175916]
- Poulin C, Graham L. The association between substance use, unplanned sexual intercourse and other sexual behaviors among adolescent students. *Addiction*. 2001; 96:607–621. [PubMed: 11300964]
- Rehm J, Shield KD, Joharchi N, Shuper PA. Alcohol consumption and the intention to engage in unprotected sex: Systematic review and meta-analysis of experimental studies. *Addiction*. 2012; 107:51–59. [PubMed: 22151318]
- Sandelowski M. Whatever happened to qualitative description? *Research in Nursing & Health*. 2000; 23:334–340. [PubMed: 10940958]
- Smith AM, Ferris JA, Simpson JM, Shelley J, Pitts MK, Richters J. Cannabis use and sexual health. *Journal of Sexual Medicine*. 2010; 7:787–793. [PubMed: 19694929]
- Strauss, A., Corbin, J. *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications; 1990.
- Townshend JM, Kambouropoulos N, Griffin A, Hunt FJ, Milani RM. Binge drinking, reflection impulsivity, and unplanned sexual behavior: impaired decision-making in young social drinkers. *Alcoholism, Clinical and Experimental Research*. 2014; 38:1143–1150.
- Tran A, Nehl EJ, Sales J, Berg CJ. Problem drinking behaviors: Differential effects of stress and school type on college students. *Open Journal of Preventive Medicine*. 2014; 4:216–221. [PubMed: 24999445]
- Tyurina A, Krupitsky E, Cheng DM, Coleman SM, Walley AY, Bridden C, ... Samet JH. Is cannabis use associated with HIV drug and sex risk behaviors among Russian HIV-infected risky drinkers? *Drug and Alcohol Dependence*. 2013; 132:74–80. [PubMed: 23410616]
- Walsh JL, Fielder RL, Carey KB, Carey MP. Do alcohol and marijuana use decrease the probability of condom use for college women? *Journal of Sex Research*. 2014; 51:145–158. [PubMed: 24164105]
- Wechsler H, Dowdall GW, Davenport A, Castillo S. Correlates of college student binge drinking. *American Journal of Public Health*. 1995; 85:921–926. [PubMed: 7604914]

**Table 1**Sample characteristics ( $N = 24$ )

	Full sample <i>n</i> (%)	Males <i>n</i> (%)	Females <i>n</i> (%)
Age, years <i>M</i> ( <i>SD</i> )	27.4 (5.8)	27.1 (6.3)	27.8 (5.6)
Gender			
Male	12 (50.0)	12 (100.0)	0 (0.0)
Female	12 (50.0)	0 (0.0)	12 (100.0)
Race/ethnicity			
White	10 (41.7)	5 (41.7)	5 (41.7)
Black	11 (45.8)	7 (58.3)	4 (33.3)
Hispanic	3 (12.5)	0 (0.0)	3 (25.0)
Heterosexual sexual orientation	24 (100.0)	12 (100.0)	12 (100.0)
HIV-negative (self-report)	24 (100.0)	12 (100.0)	12 (100.0)
Years using marijuana <i>M</i> ( <i>SD</i> )	10.1 (6.7)	10.9 (7.9)	9.3 (5.4)

There were no significant differences by gender

*M* mean, *SD* standard deviation

**Table 2**

## Questions and probes used to assess and compare sexual experiences of alcohol and marijuana

Questions and probes
Can you compare what it is like to have sex on marijuana compared to sex on alcohol?
Follow-up probes to initial question:
Do they prefer sex while high on either?
Compare how these drugs affect the kinds of partners they have
Compare how these drugs affect interactions leading to sex (and whether use of either drug is used for sex or to meet someone to have sex)
Compare whether either drug makes them feel more sexually (or socially) attractive
Compare whether they find partners more sexually (or socially) attractive on either drug
Compare how these drugs affect libido/sex drive
Compare how these drugs affect inhibitions (socially or sexually)
Compare how these drugs affect specific sexual acts
Compare potential sexual dysfunction (e.g., penile and vaginal) associated with each drug
Compare sensations (overall body and sexual organ-specific) and emotions experienced related to use of each drug
Compare length and intensity of sex and orgasm related to use of each drug
Compare how dose (amount used) of each drug affects sex
Probe for black-outs, physical effects (e.g., sensations/numbness, impotence, nausea, and dizziness), wakefulness, decision-making ability, superficial effects like smell)
Compare how participants normally feel after sex on these drugs
Probe for satisfaction
Compare potential regret after sexual experiences on these drugs
Probe for regret about partners, specific acts, and protection
Ask whether they feel one drug leads to riskier sexual situations
Probe for unprotected sex and riskier partners
Compare interactions after sex on each drug
Probe for embarrassment, “beer” goggle effect for either drug, attractiveness of partner, post-sex connection, and/or compatibility