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Internal and External Sexual Consent During Events that Involved Alcohol, Cannabis, or
Both

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1 Abstract

2 **Background:** Substance-involved sexual activity is common. Even though people recognize
3 that substance-related impairment can be a barrier to people’s ability to consent to sexual
4 activity, most do not believe that substance use automatically negates sexual consent. We
5 extended previous work on substance-related effects on internal and external consent by
6 investigating sexual events that involved alcohol, cannabis, or both.

7 **Method:** For 28 days, 113 participants ($M_{Age} = 29.2$ years, 57.5% women, 70.8% White)
8 responded to three surveys per day on their personal devices. At time points when
9 participants reported having engaged in partnered sexual activity, they were asked to report
10 their alcohol use, cannabis use, internal consent feelings, and external consent
11 communication.

12 **Results:** Across 1189 partnered sexual events, 31.5% involved alcohol, cannabis, or both.
13 **Sexual events that involved combined use were associated with diminished feelings of**
14 **safety/comfort and feelings that the sexual act was consensual, compared with events that**
15 **involved neither substance. Greater levels of alcohol consumptions were descriptively**
16 **associated with lower ratings of internal sexual consent.**

17 **Conclusions:** We found that combined use of alcohol and cannabis may lead to lower
18 internal sexual consent than using one or no substances—potentially due to greater levels of
19 impairment associated with polysubstance use. Sexual health education programs should
20 consider more nuanced approaches to teaching people how to navigate substance use and
21 sexual consent.

22 *Keywords:* sexual consent; alcohol; cannabis; marijuana; experience sampling
23 methodology

24 Introduction

25 Substance use and sexual activity commonly co-occur. In a national sample from the
26 United States, alcohol was consumed prior to or during 22.3% of people's most recent
27 vaginal-penile intercourse events, and cannabis was involved in 6.3% of events.¹ People also
28 engage in sexual activity that involves both alcohol and cannabis use. In a sample of young
29 adult drinkers, 25.1% reported using both substances before or during their previous sexual
30 experience.² The effects of substance use on sexual behavior are potentiated when substances
31 are combined. Compared with no substance use and alcohol or cannabis use alone, combined
32 use is associated with greater odds of casual sex,² multiple sexual partners,³ and condomless
33 sex.⁴ However, no researchers to our knowledge have assessed event-level effects of
34 combined use of alcohol and cannabis on sexual consent—a construct for which substance
35 use is highly relevant. **Therefore, we examined whether internal and external sexual consent**
36 **differed for sexual events that involved alcohol, cannabis, or both compared with those that**
37 **involved neither substance.**

38 Sexual Consent

39 We defined sexual consent as one's "voluntary, sober, and conscious willingness to
40 engage in a particular sexual behavior with a particular person within a particular context."⁵
41 This internal willingness can depend on a constellation of feelings: physical response,
42 safety/comfort, arousal, readiness, and agreement/want.⁶ Even when sexual activity is rated
43 as consensual, variations in internal feelings of sexual consent may be associated with various
44 aspects of sexual health—such as condom or contraceptive use⁷ and sexual satisfaction.⁸
45 Further, because people cannot intuit the internal states of others, healthy sexual consent
46 practices entail partners externally communicating their willingness via active cues.^{9,10}

47 Active consent communication involves partners saying or doing something to
48 indicate their willingness.¹¹ Such verbal or nonverbal consent cues may be explicit or

49 implicit, and people tend to prefer using nonverbal signals.^{10,12} Compared with passive
50 consent cues, whereby people *don't do* anything as their way of communicating their consent
51 (e.g., not resisting sexual activity or not saying no), active consent communication—even if it
52 is implicit and nonverbal—is more strongly associated with higher levels of internal sexual
53 consent.^{6,11}

54 **Sexual Consent and Substance Use**

55 Because substances like alcohol and cannabis use can attenuate cognitive abilities
56 (e.g., decision making and emotional control),^{13,14} “sober” was included in the definition we
57 used for sexual consent. In this sense, “sober” refers to the lack of impairment rather than the
58 complete absence of substance use—a conceptualization that aligns with research that
59 suggests people report substance-involved sexual activity that they perceive as
60 consensual.^{15,16} Indeed, substance use itself can play a role in sexual consent communication.
61 **For example, people perceive consuming alcohol together or accepting alcoholic drinks as**
62 **potential indicators of sexual interest and even consent.^{17,18} Despite potential misconceptions**
63 **that substance use and sexual consent cannot coincide, these findings suggest that the two are**
64 **not mutually exclusive.**

65 Even though people engage in consensual substance-involved sexual activity, **there**
66 **seems to be widespread awareness that substance use can complicate sexual consent.^{19,20}**
67 People tend to indicate that losing the capacity to consent depends on how intoxicated or high
68 a person is.^{21,22} But even levels of intoxication associated with impaired cognitive function
69 and motor ability are not believed to impede a person’s sexual consent. In a sample of
70 participants who had consumed about five drinks and had a breath alcohol concentration over
71 .08, 93% believed that they could consent to sex.²³ Even when people cannot remember
72 sexual events from the previous night due to substance use, they may label the experience as
73 consensual.²⁴ Because people report engaging in substance-involved sexual activity that they

74 perceive to be consensual, understanding people’s internal and external consent during sexual
75 encounters that involve alcohol, cannabis, or both may help clarify the intricate relationship
76 between substance use and sexual consent.

77 ***Alcohol and sexual consent.*** Research on sexual consent during alcohol-involved
78 sexual events is mixed. One study found that one or both partners having been “drunk” was
79 associated with diminished levels of wantedness, but having “a little to drink” was similar to
80 not having anything to drink.¹⁵ Even though alcohol-involved sexual events in another study
81 were associated with diminished feelings of love and greater perceived costs compared with
82 sober events, they were not associated with wantedness and arousal,²⁵ which are constructs
83 that reflect sexual consent.⁶ Together, these findings seem to indicate that people can
84 maintain high levels of internal consent even when they have consumed alcohol—as long as
85 they are not drunk. Regarding external consent, alcohol-involved sexual events have been
86 associated with fewer reports of using direct nonverbal behaviors and
87 initiator/communication cues to communicate consent—but only for participants who
88 referenced sexual activity with novel or casual partners.¹⁶ Overall, research examining the
89 effects of event-level alcohol use on internal and external sexual consent is limited.

90 ***Cannabis and sexual consent.*** While much of the quantitative work on substance use
91 and sexual consent has focused on alcohol, the association between cannabis and sexual
92 consent has been mentioned by participants across several qualitative studies. A recent
93 review of the literature examined associations between sexual consent and substances other
94 than alcohol.²⁶ Those findings suggested that people hold positive sex-related expectancies
95 for cannabis use, including that it enhances intimacy, connectedness, and trust; the authors
96 argued that this “heightened emotional connection” may increase people’s willingness to
97 engage in sexual activity.²⁶ In about 20% of the articles reviewed, drug use was described as
98 improving clarity and decision-making abilities, which contrasts effects of alcohol

99 consumption. Such increases in perceived clarity may empower people to believe they are
100 capable of consenting to sex while using cannabis. While these previous studies shed light on
101 cannabis-involved sexual activity perceived to be consensual, research investigating what
102 using cannabis means for internal or external sexual consent is lacking.

103 *Alcohol, cannabis, and sexual consent.* Alcohol use and cannabis use have been
104 evaluated simultaneously in a few studies assessing sexual consent. In a vignette study,
105 participants tended to perceive a woman's ability to consent to be impaired when she had
106 consumed alcohol or had smoked cannabis; however, they still indicated the fictional woman
107 who was "drunk" or "stoned" had given her consent and voluntarily agreed if she had
108 verbally communicated her consent.²⁷ In a daily diary study,²⁸ sexual events during which
109 people used alcohol or cannabis posed no greater risk of sexual coercion or lack of control—
110 which is an aspect of internal sexual consent.⁶ However, neither of these studies assessed
111 associations between sexual consent and the combined use of alcohol and cannabis.

112 **Present Study**

113 **Because no quantitative study has compared sexual consent at alcohol- versus**
114 **cannabis-involved sexual experiences,** we examined whether internal and external sexual
115 consent varied across sexual events based on the presence of alcohol, cannabis, or both—
116 using data that are part of a larger project on day-to-day variations in sexual experiences.
117 Based on the potentiating effects of combined use of alcohol and cannabis **on subjective**
118 **intoxication ratings**²⁹ and on other aspects of sexual behavior,²⁻⁴ we expected people's sexual
119 consent during sexual events with combined use to differ from events that involved only one
120 of these substances or neither. However, given the mixed and limited findings across studies
121 on substance use and sexual consent, we approached these preliminary data in an exploratory
122 manner and did not make directional hypotheses.

123 **Method**

124 **Participants**

125 We recruited participants via social media (e.g., study recruitment pages on Reddit
126 and Facebook) and a campus-wide e-newsletter at a university in the southern United States
127 to complete an eligibility screener. To be eligible, participants had to be at least 18 years old,
128 have daily access to an iOS or Android device, and be sexually active (i.e., sexual activity
129 with another person on at least two days in the preceding week⁵). **Those eligible were invited
130 to take part in a study designed “to better understand people’s sexual experiences.”**

131 Of the 545 people who completed the screener survey, we invited 218 (40.0%) to
132 participate in the ESM study. Of these, 159 (72.9%) completed the baseline survey; however,
133 21 (7.5%) of those participants never downloaded the ESM application onto their personal
134 devices. In sum, 138 people began this 28-day ESM study. Twenty-one (15.2%) people
135 withdrew from the study for personal or unknown reasons, and we removed data from four
136 participants (2.9%) who did not report at least two partnered sexual events during the study
137 period. Thus, the final analytic sample for the present study comprised 113 participants.

138 **Participants were not required to be in a committed sexual relationship at the time of the
139 study, but all indicated that they were. See Table 1 for further sociodemographic information
140 on the sample.**

141 **Procedure**

142 Participants completed a baseline survey via Qualtrics and downloaded the LifeData
143 application onto their personal device. From 11th April 2020 to 8th May 2020, surveys were
144 sent to participants three times a day for 28 days using a semi-random sampling scheme (i.e.,
145 random sampling within three four-hour windows). On average, participants completed
146 momentary surveys on 26.8 of the 28 days ($SD = 2.7$), ranging from 15 to 28. Based on the
147 number of momentary surveys they completed, participants received up to a \$40 USD e-gift

148 card for their participation. The procedure for this study was approved by the university's
149 institutional review board.

150 **Measures**

151 **Partnered sexual behavior.** In each survey, participants responded to an item that
152 asked about recent partnered sexual activity: "Since the last beep, I engaged in the following
153 behaviors with my partner." Response options included passionate kissing, genital touching,
154 oral sex, vaginal sex, and anal sex; participants were instructed to select all that applied.

155 **Substance use.** At time points that participants reported a partnered sexual event, they
156 recorded the number of alcoholic drinks they had consumed before engaging in the sexual
157 behaviors and did the same for their partner. Response options were presented on a 7-point
158 sliding scale: 0 drinks to 6+ drinks. We dichotomized this variable (0 = no alcohol use by
159 either partner; 1 = alcohol use by at least one partner). To assess cannabis-involved sexual
160 activity, we also asked participants to report whether they or their partner had used marijuana
161 beforehand (0 = no cannabis use by either partner; 1 = cannabis use by at least one partner).
162 Combined use of alcohol and cannabis was determined for individual sexual events based on
163 whether participants reported at least one alcoholic drink had been consumed *and* marijuana
164 had been used (0 = sexual events that did not involve both alcohol and cannabis; 1 = sexual
165 events that involved both alcohol and cannabis).

166 **Internal sexual consent.** At time points that participants reported a recent partnered
167 sexual event, they responded to five items developed to measure momentary internal sexual
168 consent.* Based on the five factors of the Internal Consent Scale (Jozkowski et al., 2014),

*Refer to Authors (Redacted) for details on the development of these measures, which included cognitive interviews, expert ratings, and pilot testing to provide evidence supporting their face validity, content validity, construct validity, and reliability.

169 these items assessed the extent that participants felt “erect/vaginally lubricated,”
170 “comfortable,” “turned on,” and “ready” during their recent partnered sexual event as well as
171 the extent that they felt the sexual act itself was “consensual.” Response options for each of
172 these items measuring internal sexual consent were provided on a unidimensional 11-point
173 sliding scale: 0 (Not at all) to 10 (Very much). Higher scores indicate greater feelings of
174 internal sexual consent.

175 **External sexual consent.** For each partnered sexual event, participants also
176 responded to four items developed and validated to measure momentary active consent
177 communication.* Based on previous conceptualizations of external sexual consent,^{10,11} these
178 items assessed the extent that participants used cues that were “straightforward,” “subtle,”
179 “verbal,” or “nonverbal” to communicate their willingness during their recent partnered
180 sexual event. Response options were again provided on an 11-point sliding scale: 0 (Not at
181 all) to 10 (Very much). Higher scores indicate greater use of active consent communication.

182 **Analysis**

183 We calculated person- and event-level descriptive statistics for measures of sexual
184 consent based on the use of alcohol, cannabis, or both. To test event-level associations
185 between substance use and sexual consent while accounting for within-person variability, we
186 tested multilevel models that nested time points within participants and allowed intercepts to
187 vary by participant. We reported fixed effects that compared instances of substance-involved
188 sexual activity (i.e., alcohol only, cannabis only, combined use) with those that involved
189 neither alcohol nor cannabis ($\alpha = .05$). Separate models were tested using each type of

190 internal and external sexual consent as the dependent variable. Descriptive statistics were
191 examined using SPSS 26, and multilevel models were tested using the ‘nlme’ package in R.

192 **Results**

193 **Descriptive Statistics**

194 Across the 113 participants, a total of 9492 surveys were distributed (i.e., three
195 surveys each day for 28 days). In sum, 7969 surveys were completed; thus, the overall
196 compliance rate was 84.0%. Participants reported 1189 partnered sexual events during the
197 study period (14.9% of completed time points). All sexual events were perceived to be at
198 least somewhat consensual (i.e., none received a rating of “not at all” for the item that asked
199 participants to report whether the sexual act itself felt consensual).

200 At the person level, 40 (35.4%) participants did not report any instances of substance-
201 involved sexual activity during the study period, 39 (34.5%) reported at least one alcohol-
202 involved sexual event but no cannabis-involved sexual activity, 9 (8.0%) reported at least one
203 alcohol-involved sexual event but no cannabis-involved sexual activity, and 25 (22.1%)
204 reported at least one instance of alcohol-involved sexual activity and at least one instance of
205 cannabis-involved sexual activity. Of the 25 participants who reported at least one alcohol-
206 involved sexual event and at least one cannabis-involved sexual event, 22 (88%) reported
207 sexual activity that involved both alcohol and cannabis at least once during the study period.
208 There were no significant group differences by substance-involved sexual activity for any of
209 the sociodemographic characteristics (Table 1). However, the group of participants who
210 reported at least one cannabis-involved sexual event but no alcohol-involved sexual activity
211 were descriptively distinct in that they represented a subsample that proportionally comprised
212 higher frequencies of participants who identified as women, bisexual, and White. There also
213 were not significant person-level group differences for internal or external sexual consent
214 (Table 2).

215 At the event level, 70 (5.9%) partnered sexual events involved combined use of these
216 substances; alcohol alone was used at 245 (20.6%) partnered sexual events, cannabis alone at
217 59 (5.0%) of them, and 815 (68.5%) partnered sexual events did not involve the use of either
218 alcohol or cannabis. Average ratings for internal sexual consent were relatively high on the
219 0–10 response scale across types of substance use but were consistently lower for partnered
220 sexual events that involved both alcohol and cannabis (Table 3). There were not clear
221 patterns for event-level external sexual consent based on substance use.

222 **Sexual Consent by Substance Use**

223 Using multilevel models, we found that combined use of alcohol and cannabis
224 significantly predicted internal sexual consent; however, neither alcohol nor cannabis use on
225 their own were significant predictors (Table 4). Specifically, compared with partnered sexual
226 events that did not involve alcohol or cannabis, those that involved both were associated with
227 diminished feelings of safety/comfort, $\beta = -.60, p < .001$, as well as reduced feelings that the
228 sexual act itself was consensual, $\beta = -.33, p = .033$. However, using alcohol or cannabis
229 before sexual activity was not associated with external sexual consent (Table 5).

230 **Dosage Effects of Alcohol on Sexual Consent**

231 In a post hoc manner, we descriptively assessed potential dosage effects of alcohol
232 use on sexual consent. Across the 315 partnered sexual events that involved alcohol, each
233 aspect of internal sexual consent seemed to meaningfully diminish at greater levels of alcohol
234 use (Table 6). Of note, each feeling associated with willingness to engage in sexual activity
235 decreased with every incremental increase in number of drinks. Patterns were not as clear
236 regarding potential dosage effects of alcohol on external sexual consent, but sexual events
237 that involved greater amounts of alcohol tended to coincide with sexual consent
238 communication that was less explicit and more implicit (Table 7).

239

Discussion

240 Substance-involved sexual activity was common in this study with 64.6% of
241 participants reporting at least one partnered sexual event that involved alcohol, cannabis, or
242 both and 31.5% of all partnered sexual events involving at least one of these substances.
243 Similar to evidence that the effects of substance use on sexual behavior are potentiated when
244 alcohol and cannabis are combined,²⁻⁴ we found that combined use of these substances was
245 associated with lower levels of internal consent feelings. Specifically, people felt relatively
246 less safe/comfortable when both alcohol and cannabis were involved; they also rated these
247 sexual events as less consensual. That self-reported feelings of sexual consent were
248 diminished for sexual events that involved combined use may be due to the synergistic effect
249 that simultaneously using alcohol and cannabis can have on perceived impairment.²⁹

250 Our data corroborated previous findings that typical levels of alcohol or cannabis use
251 alone do not seem to necessitate perceived consent-related impediments.²⁸ For example,
252 internal consent feelings were rated similarly for sexual events that did not involve alcohol or
253 cannabis as they were for those that involved only one of these substances. However, we
254 found that higher levels of alcohol consumption were descriptively associated with lower
255 levels of internal sexual consent—similar to findings that having “a little to drink” may not
256 affect consent even though being “drunk” does.¹⁵ While substance use itself may not result in
257 decrements to sexual consent, greater levels of substance-related impairment may.

258 A potential mechanism contributing to an association between heightened levels of
259 intoxication and diminished self-reported feelings of willingness could be that people
260 retrospectively judge their capacity to consent to sexual activity based on particular
261 symptoms that are more likely to be experienced at higher levels of consumption or when
262 combining drugs that have synergistic interactive effects—symptoms like loss of motor skills,
263 mental confusion, or loss of consciousness.³⁰ Because we did not directly measure
264 intoxication symptoms in the present study, further research is needed to assess the

265 associations between levels of impairment and internal sexual consent, which may help
266 inform recommendations for how researchers should conceptualize and operationalize
267 sufficient lack of impairment to consent to sexual activity.

268 Combined use of alcohol and cannabis was not directly associated with external
269 sexual consent in the present study. However, combined use might indirectly influence sexual
270 consent communication via negative effects on internal consent feelings, which research has
271 shown are associated with people's behavioral consent cues.^{6,11} Further, our measures may
272 not have been able to capture the nuanced role that substance use plays in the consent
273 communication process (e.g., accepting an alcoholic drink can be perceived as a consent
274 indicator).^{17,18} Specifically, we do not know the extent that participants recognized their or
275 their partner's substance use as a consent cue or whether they reported it as explicit or
276 implicit. Future studies should be designed to assess how social norms regarding substance
277 use, especially combined use, may be perceived as potential indicators of a person's
278 willingness to engage in sexual activity.

279 Finally, none of the partnered sexual events in this study were rated as "not at all"
280 consensual, which may be due to our sample comprising only participants who were in
281 committed relationships.[†] Indeed, simply being in a committed relationship with somebody
282 can be perceived as an indicator of consent,^{31,32} and people think committed partners do not
283 need to communicate their willingness to engage in sexual activity.³³ Consequently, ratings of
284 internal sexual consent tend to be higher for those in committed relationships versus casual
285 ones.³⁴ Therefore, people engaging in casual sex alongside the combined use of alcohol and

[†] Although we did not exclude people in casual relationships, our inclusion criteria for recent sexual activity limited our sample, especially due to pandemic-related social distancing measures in place at the time of data collection.

286 cannabis may be more likely than those in committed relationships to report their experiences
287 as nonconsensual. Relationship status can also moderate associations between substance use
288 and sexual consent. For casual sexual partners but not committed ones, event-level alcohol
289 use was associated with diminished internal consent and less direct external consent,¹⁶ which
290 may further explain the lack of association between substance use and sexual consent
291 communication in the present study. Extending research on substance use and sexual consent
292 to casual sexual relationships is warranted.

293 **Implications**

294 People hold positive sex-related expectancies for substance use (e.g., enhanced
295 intimacy, connectedness, and trust), which can increase people's willingness to engage in
296 sexual activity.²⁶ Despite this perceived benefit, substance use is recognized as a risk factor
297 for sexual assault,^{35,36} which constitutes a public health crisis given its widespread negative
298 effects on victims' well-being (e.g., psychological trauma, anxiety/depression, substance use,
299 physical harm). **Thus, both substance use prevention initiatives and sexual education**
300 **programs should emphasize that heavy drinking as well as the combined use of alcohol and**
301 **cannabis can diminish people's internal experiences of sexual consent—potentially via higher**
302 **levels of substance-related impairment (e.g., loss of motor skills, mental confusion, or loss of**
303 **consciousness³⁰). Substance-related decrements in sexual consent may, in turn, be associated**
304 **with other important aspects of sexual health (e.g., sexual satisfaction).⁸ Therefore, sexual**
305 **consent must be prioritized, and sexual partners—even those in committed relationships—**
306 **should explicitly address and respect each other's expectations and boundaries regarding**
307 **combined substance use and sex before they become impaired. Preventive measures like**
308 **these should be endorsed to allay the potential for combined alcohol and cannabis use to**
309 **result in nonconsensual sexual activity.**

310 **Limitations**

311 A few limitations warrant mention. First, we did not measure intoxication symptoms,
312 which would have allowed us to make stronger claims regarding the effects of level of
313 impairment on sexual consent; further, our measurement was limited in that we assessed
314 cannabis use dichotomously. Second, our sample reflects a select subpopulation and
315 generalizing findings to the larger population of sexually active adults in committed
316 relationships should be done with caution. Third, even though our study design reduced recall
317 biases inherent to self-reported retrospective sexual behavior data,³⁷ other biases (e.g., social
318 desirability) remain a concern. Fourth, by asking participants to fill out daily surveys in their
319 typical settings, we likely improved the ecological validity of our findings;³⁸ however, by
320 responding to daily prompts about their sexual activity, participants may have changed what
321 would have otherwise been their natural behavior.³⁹

322 Finally, collecting these data during the Covid-19 pandemic may have limited various
323 aspects of the present study. For example, people not in committed sexual relationships may
324 have been practically excluded because we recruited participants after many governments had
325 begun enforcing social distancing measures. However, while we did not assess whether or
326 how the Covid-19 pandemic may have affected substance use or sexual consent, our study
327 design systematically controlled for time-related factors by collecting all data during the same
328 28-day period.

329 **Conclusion**

330 This study provided evidence that the combined use of alcohol and cannabis use as
331 well as greater levels of alcohol use are important to consider for sexual consent. Providing
332 preliminary evidence that *level of impairment* should be emphasized rather than *absence of*
333 *substance use*, we found decrements in people's internal sexual consent when they combined
334 alcohol and cannabis but not when they had used either substance alone. Further, even though
335 alcohol-involved sexual events on average were not associated with diminished sexual

336 consent, those that involved greater levels of alcohol use seemed to be. Thus, while we
337 support the inclusion of “sober” in definitions of sexual consent,⁵ we suggest that this word
338 be changed to “unimpaired” to hopefully prevent potential misunderstandings that substance-
339 involved sexual activity cannot be consensual. Suggesting that substance use and sexual
340 consent cannot coincide—at least within the context of committed relationships—does not
341 acknowledge people’s daily experiences with sexual activity that involve alcohol or cannabis.
342 Indeed, levels of internal and external sexual consent were relatively high disregarding
343 whether these substances were used before or during sexual events. To better understand the
344 nuances underlying sexual consent and substance use, studies investigating how people
345 determine or conceptualize consensual versus nonconsensual substance-involved sexual
346 activity are needed. Given that we found combined use of alcohol and cannabis to diminish
347 feelings of sexual consent, future work should also attempt to identify and promote healthy
348 and empirically supported sexual consent practices that may be applied to instances of
349 polysubstance use and sexual activity.

350

351 **Conflicts of Interest:** The authors declare no conflicts of interest.

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355

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Table 1

Sociodemographic Characteristics by Substance Use during Sexual Activity

Variable	Total (<i>N</i> = 113)		None ¹ (<i>n</i> = 40)		Alcohol ² (<i>n</i> = 39)		Cannabis ³ (<i>n</i> = 9)		Both ⁴ (<i>n</i> = 25)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	29.2	6.5	29.8	7.8	28.4	5.1	29.6	7.0	29.4	7.0
Relationship Length	5.8	5.8	6.8	6.5	5.0	4.7	6.3	6.1	5.3	6.2
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender										
Women	65	57.5	23	57.5	24	61.5	7	77.8	12	48.0
Men	47	41.6	17	42.5	14	25.9	2	22.2	13	52.0
Other	1	0.9	0	0.0	1	2.6	0	0.0	0	0.0
Sexual Orientation										
Heterosexual	82	72.6	31	77.5	28	71.8	6	66.7	17	68.0
Bisexual	19	16.8	4	10.0	6	15.4	3	33.3	6	24.0
Other	12	10.6	5	12.5	5	12.9	0	0.0	2	8.0
Race/Ethnicity										
White	80	70.8	25	62.5	27	69.2	8	88.9	20	80.0
Hispanic	12	10.6	7	17.5	4	10.3	0	0.0	1	4.0
Asian	11	9.7	6	15.0	4	10.3	0	0.0	1	4.0
Black	4	3.5	2	5.0	1	2.6	0	0.0	1	4.0
Other/multiple	6	5.3	0	0.0	3	7.7	1	11.1	2	8.0
Student										
Yes, undergraduate	13	11.5	6	15.0	1	2.6	0	0.0	6	24.0
Yes, graduate	55	48.7	19	47.5	21	53.8	4	44.4	11	44.0
No	45	39.8	15	37.5	17	43.6	5	55.6	8	32.0

Note. ¹Participants who did not report any substance-involved sexual activity. ²Participants who reported at least one alcohol-involved sexual event but no cannabis-involved sexual activity. ³Participants who reported at least one cannabis-involved sexual event but no alcohol-involved sexual activity. ⁴Participants who reported at least one alcohol-involved sexual event and at least one cannabis-involved sexual event.

Table 2

Person-Level Descriptive Statistics for Sexual Consent by Substance Use during Sexual Activity

Variable	None ¹ (n = 40)		Alcohol ² (n = 39)		Cannabis ³ (n = 9)		Both ⁴ (n = 25)	
	M	SD	M	SD	M	SD	M	SD
<i>Internal Consent</i>								
Erect/Lubricated	8.70	1.19	8.18	1.47	8.59	.97	8.17	1.77
Comfortable	8.94	1.24	9.07	.86	9.27	1.20	8.88	1.14
Turned On	8.71	1.38	8.54	1.10	8.69	1.06	8.49	1.39
Consensual	9.39	.94	9.44	.64	9.70	.44	9.15	1.01
Ready	8.86	1.19	8.71	1.16	9.14	.88	8.63	1.20
<i>External Consent</i>								
Explicit	8.16	1.37	8.04	1.37	8.97	.93	7.60	1.48
Implicit	6.05	2.34	5.60	2.47	5.99	2.65	6.66	1.81
Verbal	7.05	2.01	6.36	2.21	7.58	2.44	7.02	1.52
Nonverbal	6.85	2.51	6.71	2.32	6.49	2.77	7.40	1.59

Note. ¹Participants who did not report any substance-involved sexual activity. ²Participants who reported at least one alcohol-involved sexual event but no cannabis-involved sexual activity. ³Participants who reported at least one cannabis-involved sexual event but no alcohol-involved sexual activity. ⁴Participants who reported at least one alcohol-involved sexual event and at least one cannabis-involved sexual event.

Table 3

Event-Level Descriptive Statistics for Sexual Consent by Substance Use during Sexual Activity

Variable	Neither Substance (<i>n</i> = 815)		Alcohol Use Only (<i>n</i> = 245)		Cannabis Use Only (<i>n</i> = 59)		Combined Use (<i>n</i> = 70)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>Internal Consent</i>								
Erect/Lubricated	8.32	2.25	7.84	2.54	8.03	2.64	7.76	2.36
Comfortable	9.01	1.43	8.96	1.47	9.15	1.36	8.16	2.16
Turned On	8.49	1.95	8.43	1.93	8.27	2.00	8.26	2.03
Consensual	9.29	1.32	9.34	1.17	9.59	1.00	8.59	1.50
Ready	8.71	1.78	8.62	1.78	8.93	1.54	8.03	2.23
<i>External Consent</i>								
Explicit	7.89	2.65	7.92	2.45	7.56	3.48	7.31	2.36
Implicit	6.08	3.23	5.76	3.12	5.54	3.65	6.54	2.66
Verbal	6.71	3.41	6.61	3.45	7.07	3.63	6.47	3.27
Nonverbal	7.00	3.05	6.75	3.02	6.88	3.32	6.97	2.85

Table 4

Multilevel Models Assessing Event-Level Internal Sexual Consent by Substance Use during Sexual Activity

	Erect/ Lubricated		Comfortable		Turned On		Consensual		Ready	
	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>
<i>Fixed Effects</i>										
Intercept	8.41	.15	9.05	.11	8.56	.13	9.37	.08	8.78	.14
Alcohol use	-.30	.16	-.07	.10	.03	.13	.03	.08	-.03	.12
Cannabis use	-.04	.31	-.06	.18	.00	.25	.27	.16	.09	.23
Combined use	-.12	.30	-.60***	.18	.14	.24	-.33*	.16	-.36	.23

Note. The reference group for each comparison comprises partnered sexual events that did not involve either alcohol or cannabis.

* $p < .05$. *** $p < .001$.

Table 5

Multilevel Models Assessing Event-Level External Sexual Consent by Substance Use during Sexual Activity

	Explicit		Implicit		Verbal		Nonverbal	
	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>
<i>Fixed Effects</i>								
Intercept	7.90	.14	6.14	.20	6.79	.20	6.92	.20
Alcohol use	.00	.20	-.43	.23	-.08	.26	-.17	.22
Cannabis use	-.52	.37	-.44	.44	-.35	.48	.05	.42
Combined use	-.14	.36	-.54	.43	-.67	.47	.02	.41

Note. The reference group for each comparison comprises partnered sexual events that did not involve either alcohol or cannabis.

Table 6

Event-Level Internal Sexual Consent by Number of Alcoholic Drinks

	Erect/Lubricated		Comfortable		Turned On		Consensual		Ready	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1 drink (<i>n</i> = 127)	8.18	1.29	9.12	.91	8.58	1.07	9.47	.71	8.76	1.15
2 drinks (<i>n</i> = 74)	8.14	1.68	9.05	.97	8.54	1.27	9.35	.73	8.68	1.08
3 drinks (<i>n</i> = 56)	7.95	1.88	8.93	1.12	8.32	1.48	9.19	.95	8.58	1.19
4 drinks (<i>n</i> = 31)	7.50	1.95	8.33	1.53	8.05	1.41	8.79	1.20	8.16	1.42
5 drinks (<i>n</i> = 21)	7.06	1.25	7.85	1.32	7.57	1.12	8.15	1.09	7.68	1.22
6+ drinks (<i>n</i> = 6)	5.59	1.52	6.67	1.36	6.92	1.09	7.39	.87	6.48	1.05

Table 7

Event-Level External Sexual Consent by Number of Alcoholic Drinks

	Explicit		Implicit		Verbal		Nonverbal	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1 drink (<i>n</i> = 127)	7.94	1.11	5.45	2.14	6.48	1.74	6.66	1.96
2 drinks (<i>n</i> = 74)	8.08	1.37	5.94	2.22	6.86	1.88	7.18	1.96
3 drinks (<i>n</i> = 56)	7.87	1.24	5.96	2.18	6.55	2.03	6.88	2.25
4 drinks (<i>n</i> = 31)	7.27	1.53	6.41	1.60	6.80	1.42	6.66	1.56
5 drinks (<i>n</i> = 21)	6.58	1.59	7.35	.98	6.69	2.06	6.85	1.45
6+ drinks (<i>n</i> = 6)	5.77	.69	6.38	.26	6.18	1.27	6.14	1.04