

## **First-year college students' alcohol and hookup behaviours: Sexual scripting and implications for sexual health promotion**

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### **Abstract:**

This study used a sexual scripting framework to analyse data from the Online College Social Life Survey to examine the role of individual, (e.g. gender, race and alcohol use), relational (partner type, condom use behaviours), and contextual factors (sex ratios and fraternity/sorority affiliation) influencing 4,292 first-year college students' hookup experiences. Results suggest that hookups are relatively "safe", with the majority involving non-penetrative sexual behaviour, condom use, and familiar partners. However, alcohol use affected hookup behaviours and lower levels of condom use were associated with heavy alcohol use, even with less well known partners. Findings point to the importance of interventions that reinforce first-year students' positive behaviours and present them with protective behavioural strategies to use in the context of alcohol, and with repeat or well-known partners to reduce risk and have enjoyable, consensual sexual experiences.

**Keywords:** Casual sex | college students | hookups | alcohol | sexual scripts

### **Article:**

#### **Introduction**

In the US, the transition to college remains a pivotal moment in a young person's life typically marked by other changes, such as growing independence, moving out of the family home, and changes in friends and relationships (HERI 2015; Eagan et al. 2014). During this transition, young adults begin to explore their sexuality as they navigate through college "hookup" culture. Hookups - casual sex encounters between individuals without the explicit expectation of a dating or romantic relationship - are typically discussed as including penetrative behaviours such as vaginal and anal sex, yet in reality are often characterised by exclusively non-penetrative

behaviours such as kissing, mutual masturbation and/or oral sex (Fielder et al. 2014; Olmstead, Pasley, and Fincham 2013). Hookups have increasingly become a part of US college sexual scripts and a normative form of relationship and sexual exploration (Stinson 2010).

Experimentation with sex and alcohol are a large part of the college hookup script (Kuperberg and Padgett 2015) and the “college effect”, which includes increased participation in higher risk behaviours, especially alcohol consumption, in the first few months of college (DeJong 2017). Recent estimates indicate that 82% of college students have consumed alcohol in the past year (SAMHSA 2015). Among those students, nearly 44% report heavy episodic drinking (i.e. 4 or more alcoholic drinks per occasion for women and 5 or more for men) (SAMHSA 2015) and 16% report having 10 or more drinks at least once within the past 30 days (ACHA 2014). Despite final year students being more likely to consume alcohol than any other group, first-year college students are more likely to participate in heavy episodic drinking than their older peers; over 42% of first-year college students report one or more episodes of heavy drinking in the last 30 days (NIAAA 2017).

Alcohol use frequently occurs in conjunction with sexual behaviour. Downing-Matibag and Geisinger (2009) found 80% of students reported using alcohol before their last hookup. Alcohol consumption also increases participation in sexual risk behaviours. For instance, alcohol use is associated with an increased number of sexual partners (Patel et al. 2006), reduced condom use (Downing-Matibag and Geisinger 2009; Gilchrist et al. 2012), and increased participation in a hookups (Downing-Matibag and Geisinger 2009; Fisher et al. 2012; Paul, McManus, and Hayes 2000). The purpose of this study therefore was to investigate the hookup scripts of first-year college students and explore the role of alcohol on these sexual behaviours.

## Theoretical frame

Sexual script theory offers a useful framework for understanding hookup behaviours on college campuses (Eaton et al. 2016). It posits that individuals have intrapersonal (individual), interpersonal (relational), and contextual (cultural) scripts and expectations for behaviours that occur within a sexual interaction (Frith and Kitzinger 2001; Gagnon and Simon 1973; Wiederman 2005). The hookup script focuses on casual sexual activity and may consist of kissing only; mutual masturbation; genital stimulation; oral, vaginal, and/or anal sex; or any combination of these acts (Bogle 2008; Downing- Matibag and Geisinger 2009; England 2010; Fielder and Carey 2010a). What behaviours are included in the sexual interaction and whether or not protective measures (e.g. condoms) are used within a hookup may be affected by the individual and their partners. Sexual script theory also suggests that cultural scenarios or expectations of behaviours influence how sexual interactions occur (Gagnon and Simon 1973; Wiederman 2005).

*Individual and relational scripts.* Individual level scripts are where one evaluates and interprets cultural level scripts to create their own decisions about their sexuality and sexual decision making (e.g. alcohol use before hookups, hookup behaviours). Similar processes occur at the interpersonal level but focus on the interactions between two or more people (e.g. partner familiarity, orgasm and the enjoyment of partnered sex).

Alcohol use is a strong predictor of hookups, especially in social settings (e.g. fraternity/sorority parties or clubs) (Fielder and Carey 2010b; Kuperberg and Padgett 2015). Approximately 65% of US college students report alcohol use before their most recent hookup (Grello, Welsh, and Harper 2006). Binge drinking prior to, or during hookups increases sexual risk behaviours depending on their familiarity with partners; and increased partner familiarity increases the likelihood of unprotected sex, yet decreases the likelihood of binge drinking (Kuperberg and Padgett 2016a). Hookups, especially in conjunction with alcohol, may facilitate participation in sexual risk behaviours that could lead to negative consequences for the sexual, emotional, and physical health and safety of students (Allison and Risman 2013; LaBrie et al. 2014). Notably, overall college students tend to experience more positive (e.g. sexual satisfaction, enjoyment, and pleasure) than negative (e.g. regret and guilt) reactions to a hookup (Owen et al. 2010; Owen and Fincham 2011; Snapp, Ryu, and Kerr 2015). However, women tend to report fewer orgasms during a hookup regardless of the sexual activities that are involved (Armstrong, England, and Fogarty 2012; Allison and Risman 2013). Sexual satisfaction and enjoyment in hookups are higher when college students are motivated by intimacy and pleasure (Snapp, Ryu, and Kerr 2015) and they report sex as less pleasurable when under the influence of alcohol (Herbenick et al. 2019)

*Cultural scripts.* Cultural level scripts refer to norms and contextual factors at the broader level of society or college campuses in this case. Campus-specific factors such as sex ratios (i.e. the ratio of female to male students) and the percentage of students affiliated with fraternities and sororities may influence both the overall prevalence of hookups, as well as the type of hookup behaviours engaged in by college students. Campus sex ratios affect sexual partnering opportunities. When one sex significantly outnumbers the other, the minority sex will have greater opportunities to negotiate sexual intercourse on their own terms (Baumeister and Vohs 2004; Mahay and Laumann 2004; Regnerus and Uecker 2011). For example, women report having fewer dating relationships and higher rates of engaging in sexual activity on campuses with higher proportions of women (Uecker and Regnerus 2010), despite both women and men both reporting that they desire a relationship (Kuperberg and Padgett 2015). Further, there may be a decreased ability to negotiate condom use due to limitations of (hetero)sexual networks from sex ratio imbalances (Adkins et al. 2015). In addition, there may be increased opportunities, norms and expectations for alcohol consumption through fraternity and sorority culture, resulting in increased acceptability and social norms related to hookup and/or other casual sexual encounters (Allison and Risman 2013; Holman and Sillars 2012; Berntson, Hoffman, and Luff 2014). The intersection of these factors may influence the ways in which college students negotiate sexual scripts and affect healthy and normative sexual development and experimentation during this time period.

Understanding first-year college students' sexual hookup scripts, especially with alcohol use, is crucial for developing relevant sexual health promotion interventions that target the intersection between alcohol use and sexual behaviours to promote safe, consensual, and pleasurable sexual experiences. Accordingly, the purpose of this analysis was to use a sexual script framework (Gagnon and Simon 1973) to examine the role of *individual* (e.g. alcohol use), *relational* (e.g. partner type) and *cultural* (e.g. campus sex ratios and fraternity and sorority affiliation) factors influencing college students' hookup repertoire and experience (e.g. specific sexual behaviours, condom use, and enjoyment). Specifically, it addresses the following research questions: 1) Are

there significant differences in individual, relational and cultural factors between first-year college students' who participate in penetrative and those who participate in non-penetrative hookup behaviours; 2) is there a significant association between individual, relational and cultural factors and penetrative hookups among first-year college students; and 3) does alcohol use during last hookup vary by relational (e.g. partner familiarity, orgasm, enjoyment) and cultural (e.g. fraternity and sorority affiliation, sex ratio) factors?

## Methods

### Data collection

We conducted secondary data analysis using the Online College Social Life Survey (OCSLS), consisting of 24,131 college students who represented 21 colleges and universities nationwide in the USA and 1 community college. Detailed methods are discussed elsewhere (Armstrong, England, and Fogarty 2012). Students from the community college were included to offer a more comprehensive investigation. Briefly, the OCSLS involved a convenience sample of college students who completed a self-administered survey about their hookup and dating experiences while in college between autumn 2005 and spring 2011. Participants received no compensation for completing the survey. A higher proportion of college women (69%) completed the OCSLS, in comparison to the average sex ratio of college students at these universities (53% female). We limited our sample to 4,292 (of 8,060; 53.3%) first-year college students who reported having a hookup since entering college. The Institutional Review Board at the University of North Carolina Greensboro approved this secondary data analysis.

### Measures

*Demographic characteristics.* Students' demographic characteristics were assessed including: age, race/ethnicity, gender identity, and sexual orientation. We developed a binary variable to reflect participants' self-identified orientation to ensure sufficient power for our analyses: (1) heterosexual; and (2) lesbian, gay, or bisexual (LGB). Students who selected "I'm not sure" or self-reported as transgender were excluded from the analyses ( $n = 4$ ; 0.10%) as their hookup experiences may be unique (Watson, Snapp, and Wang 2017). We also developed a binary variable to reflect on- and off-campus residency: (1) on-campus (i.e. dormitory or other on-campus housing); or (2) off-campus (i.e. fraternity/sorority housing, apartment or house, off-campus, with parents, or other). Students were asked how often they attended religious services in the past year; we developed a binary variable to assess this: (1) once a week or more; or (2) less than once a week. Finally, mother's education level was assessed (less than high school, high school graduate only, some college, bachelor's degree, and graduate degree) as a proxy measure of socioeconomic status.

*Hookup experiences: Individual and relational factors.* To examine the range of hookup experiences, students were provided with the stem: "The following questions are about any sexual activity that occurred during this [most recent] hookup," then asked, "Which sexual behaviours did you engage in?" Response options included answering yes or no to: kissing, masturbation, breast touching (given or received), manual-genital stimulation (given and

received), oral-genital sex (given and received), vaginal intercourse, anal intercourse (receptive and/or insertive) and orgasm (self and perception of partner).

We recoded the original data into two categories: (1) penetrative sex (i.e. vaginal, and/or anal sex exclusively or in conjunction with kissing, breast touching, manual-genital stimulation and/or oral sex); or (2) non-penetrative sex (i.e. kissing, touching, manual-genital stimulation, and/or oral sex). While oral sex could be a penetrative behaviour, we decided to include it in the non-penetrative category due to the decreased efficiency of STI transmission (Varghese et al. 2002).

Alcohol use during or prior to hookup was assessed by creating a three-level variable to reflect the cut-off for heavy episodic drinking among women and men: did not drink any alcohol; drank between 1 and 3 drinks (women) or 1 and 4 drinks (men); or drank 4 (women) or 5 (men) drinks or more at one time. Students were also asked about these hookup events, including if they: used a condom (no/yes), had an orgasm (no/yes), perceived their partner had an orgasm (no/yes), and how much they enjoyed the hookup (4-item Likert scale from not at all to very much).

Students provided information about their hookup partner. They indicated their familiarity with the partner (5-item Likert scale from not at all known to very well known) and hookup frequency (we developed a binary variable to reflect the number of hookups with this partner: first hookup with person or repeat hookup with person).

*Cultural factors.* Information on colleges and universities' gender ratios and the ratio of students who are members of fraternities and sororities were obtained from their respective websites to coincide with the end of OCSLS data collection. We standardised these variables at a mean of 0 and a standard deviation of 1.

## Data analysis

SAS (version 9.4) was used for analysis. Descriptive statistics were calculated to describe the sample and t-tests and chi-square tests were used to assess if there were differences in hookup behaviours (penetrative vs. non-penetrative) by individual, relational and cultural factors.

We then used a series of mixed logistic regression models to test the relationship between alcohol and hookups, focusing on both penetrative (e.g. vaginal and anal sex) and non-penetrative (e.g. manual-genital stimulation and oral sex) sexual behaviours and accounting for the nesting of students within the colleges and universities included in this analysis. Two sets of regression analyses were conducted to first estimate the effect of alcohol use on the type of hookup and then to estimate the effect of alcohol use on condom use among students who engaged in a penetrative hookup. For each set of regression models, we added interaction terms to assess whether the effect of alcohol use varied by (a) campus sex ratio, (b) fraternity and sorority affiliation, (c) partner familiarity, and (d) reported orgasm. Dummy variables were created for each of the interaction terms. Tables present regression coefficients and odds ratios for all models.

Modern missing data approaches (e.g. PROC MI with FCS statement; SAS 9.4) were used to impute the data for all our analyses, which enabled us to maintain the power associated with a

full sample (Graham 2012). Most variables had less than 5% responses missing; the condom use variable however had 9% responses missing.

## Results

### Sample characteristics

There was a total of 4,292 first-year college students who reported having a hookup since starting college. Similar to the overall OCSLS sample, the majority of the participants were women (69%), White (75%), heterosexual (95%), attended religious services (62%), and lived on-campus (87%). They had a mean age of 19 years and 33% reported mother's education as having at least a bachelor's degree. Across the institutions, campus gender (women) and Greek (i.e. fraternity/sorority) concentrations had a mean of 52% (range = 45%–65%) and 7% (range = 0%–35%), respectively.

Around two-thirds (66%) reported that their most recent hookup was exclusively non-penetrative, whereas 34% reported a penetrative hookup. There were statistically significant differences in the type of hookup (i.e. penetrative and nonpenetrative) among first-year college students by individual, relational, and cultural factors.

### Hookups: demographic differences

College students who were female (68% vs. 63% of males,  $p < 0.001$ ), heterosexual (67% vs. 57% of LGB,  $p = 0.003$ ), lived on-campus (67.5% vs. 59.4% of students who lived off-campus,  $p < 0.001$ ), and had a mother with a graduate degree (69.6% vs. 61.2% of students whose mother had a high school diploma only,  $p < 0.001$ ) were more likely than others to have a non-penetrative hookup. In contrast, higher proportions of college students who were African American (47% vs. 33% White, 32% Asian, 31% Hispanic, and 36% mixed race,  $p < 0.001$ ) or older ( $M = 18.7$ ;  $SD = 1.2$ , vs.  $M = 18.5$ ;  $SD = 0.8$ ,  $p < 0.001$ ) reported penetrative hookups (see Table 1 for more details). There were significant racial differences in participating in a penetrative hookup. African American students were 2.11 times more likely to report a penetrative hookup compared to White students (95% CI: 1.41-3.14,  $p < 0.01$ ). See Table 2 for more details.

### Hookups: individual factors

Overall, about 85% of students used a condom within a penetrative hookup. Gender and age were negatively associated with condom use. Female students were 0.65 times less likely to report condom use compared to male students (95% CI: 0.49-0.87,  $p < 0.01$ ). As students' age decreased, reported condom use increased; younger first-year college students were 0.85 times more likely to report condom use compared to older first-year college students (95% CI: 0.76–0.95,  $p < 0.01$ ). Sexual orientation was positively associated with condom use; heterosexual students were 1.96 (95% CI: 1.23–3.14,  $p < 0.01$ ) times more likely to report condom use compared to LGB students.

**Table 1.** Comparison characteristics and behaviours between first-year college students who had penetrative vs. non-penetrative hookups

Characteristic	Non-penetrative sex %, mean (N = 2,848)	Penetrative sex %, mean (N = 1,441)	X <sup>2</sup> p-value	Total (N = 4,292)
Gender			0.00	
Female	67.8 (1,996)	32.2 (948)		68.6
Male	63.4 (852)	36.7 (493)		31.3
Race/Ethnicity			0.00	
African American/Black	53.5 (99)	46.5 (86)		4.3
Caucasian/White	66.8 (2,144)	33.2 (1,066)		75.2
Asian	67.7 (218)	32.3 (104)		7.5
Hispanic	69.5 (276)	30.5 (121)		9.3
Mixed Race/Other	64.1 (100)	35.9 (56)		3.7
Mean age (SD)	18.48 (0.774)	18.68 (1.182)	0.00	18.5
Sexual Orientation			0.00	
Heterosexual	66.9 (2,688)	33.1 (1,332)		95.2
LGB	56.9 (116)	43.1 (88)		4.8
Religiosity			0.06	
Religious	67.5 (1,723)	32.5 (831)		62.2
Non-Religious	64.6 (1,002)	35.4 (549)		37.8
Living Arrangements			0.00	
Live on-campus	67.5 (2,512)	32.5 (1,211)		86.9
Live off-campus	59.4 (334)	40.6 (228)		13.1
Mother's education			0.00	
Graduate degree	69.6 (667)	30.4 (291)		22.4
Bachelor's degree	68.0 (967)	32.0 (445)		33.3
Some college	65.4 (660)	34.7 (350)		23.7
High school only	61.2 (403)	38.9 (256)		15.4
Less than high school	64.7 (143)	35.3 (78)		5.2
Gender Ratio: Female	51.65 (3.92)	51.67 (4.00)	0.83	51.7
Fraternity Ratio	7.96 (8.28)	6.43 (6.60)	0.00	7.4
Sorority Ratio	9.36 (7.89)	7.73 (6.61)	0.00	
Condom use	14.5 (176)	85.5 (1,036)	0.00	32.4
No alcohol use prior to/during				
Some alcohol	69.6 (370)	30.5 (162)	0.10	12.4
Heavy alcohol	67.8 (1,593)	32.2 (757)	0.03	54.8
Experienced orgasm	23.8 (238)	76.2 (762)	0.00	23.3
Partner experienced orgasm	26.8 (393)	73.2 (1072)	0.00	34.1
Enjoyed experience			0.00	
Very much	57.3 (1,110)	42.7 (828)		46.2
Somewhat	72.3 (1,195)	27.8 (459)		39.4
Very little	77.9 (326)	22.0 (92)		10.0
Not at all	69.7 (131)	30.3 (57)		4.5
Knew partner			0.00	
Very well	53.6 (461)	46.4 (399)		20.0
Moderately well	65.6 (629)	34.4 (330)		22.4
Somewhat	66.7 (588)	33.3 (294)		20.6
A little bit	71.6 (668)	28.4 (265)		21.8
Not at all	76.3 (495)	23.7 (154)		15.2
Repeat partner	54.9 (1,155)	45.1 (950)	0.00	49.0

**Table 2.** Multinomial logistic regression analyses predicting penetrative hookup

	Odds Ratio	95% Confidence Intervals	
		Lower Bound	Upper Bound
Alcohol use prior to/during			
No alcohol use (referent)			
Some alcohol	1.10	0.83	1.47
Heavy alcohol	1.48**	1.21	1.81
Gender			
Male (referent)			
Female	1.11	0.91	1.35
Race/Ethnicity			
Caucasian/White (referent)			
African American/Black	2.11**	1.41	3.14
Asian	1.06	0.76	1.47
Hispanic	0.97	0.68	1.37
Mixed Race/Other	1.36	0.87	2.13
Mean age (SD)	1.07	0.87	1.81
Sexual Orientation			
LGB (referent)			
Heterosexual	1.21	0.81	1.81
Religiosity			
Non-Religious (referent)			
Religious	0.83	0.69	1.00
Living Arrangements			
Live off-campus (referent)			
Live on-campus	0.98	0.69	1.41
Mother's education			
Graduate degree (referent)			
Bachelor's degree	1.06	0.84	1.34
Some college	1.05	0.81	1.35
High school only	1.33*	1.00	1.76
Less than high school	1.31	0.83	2.06
Gender Ratio: Female	1.01	0.95	1.06
Fraternity Ratio	0.95	0.83	1.10
Sorority Ratio	1.01	0.87	1.18
Experienced orgasm	3.69**	2.93	4.64
Partner experienced orgasm	10.04**	8.33	12.10
Enjoyed experience			
Very much (referent)			
Somewhat	0.93	0.77	1.13
Very little	0.88	0.64	1.22
Not at all	1.49	0.96	2.33
Knew partner			
Very well (referent)			
Moderately well	0.94	0.73	1.21
Somewhat	0.87	0.67	1.14
A little bit	0.77	0.58	1.01
Not at all	0.77	0.56	1.07
Repeat partner	1.82**	1.50	2.21
Intercept	0.02**	0.00	0.75

Note: \**p*-value <0.05, \*\* *p*-value <0.01.

**Table 3.** Alcohol use and known partner main effects and interactions predicting condom use

	STEP 1			STEP 2		
	95% Confidence Interval			95% Confidence Interval		
	Odds ratio	Lower Bound	Upper Bound	Odds ratio	Lower Bound	Upper Bound
Alcohol use prior to/during						
No alcohol use (referent)						
Some alcohol	1.34	0.86	2.09	1.03	0.48	2.21
Heavy alcohol	0.86	0.65	1.14	0.58*	0.37	0.92
Gender						
Male (referent)						
Female	0.65**	0.49	0.87	0.64**	0.48	0.86
Race/Ethnicity						
Caucasian/White (referent)						
African American/Black	1.84	0.99	3.41	1.76	0.95	3.27
Asian	1.00	0.62	1.62	0.98	0.60	1.59
Hispanic	1.17	0.71	1.91	1.14	0.69	1.87
Mixed Race/Other	1.37	0.68	2.78	1.32	0.65	2.67
Mean age (SD)	0.85**	0.76	0.95	0.86**	0.77	0.96
Sexual Orientation						
LGB (referent)						
Heterosexual	1.96**	1.23	3.14	1.98**	1.23	3.17
Religiosity						
Non-Religious (referent)						
Religious	1.01	0.78	1.31	1.00	0.78	1.30
Living Arrangements						
Live off-campus (referent)						
Live on-campus	1.48	0.98	2.25	1.45	0.96	2.20
Mother's education						
Graduate degree (referent)						
Bachelor's degree	1.28	0.91	1.80	1.28	0.91	1.80
Some college	1.24	0.86	1.78	1.24	0.86	1.78
High school only	1.31	0.89	1.94	1.30	0.87	1.93
Less than high school	2.00	0.98	4.09	2.12*	1.04	4.34
Gender Ratio: Female	1.01	0.97	1.05	1.01	0.97	1.05
Fraternity Ratio	1.03	0.93	1.14	1.03	0.93	1.13
Sorority Ratio	0.97	0.87	1.08	0.97	0.88	1.08
Experienced orgasm	0.79	0.58	1.07	0.77	0.57	1.04
Partner experienced orgasm	0.87	0.63	1.19	0.88	0.64	1.21
Enjoyed experience						
Very much (referent)						
Somewhat	1.22	0.91	1.63	1.23	0.92	1.64
Very little	1.52	0.85	2.70	1.49	0.83	2.66
Not at all	0.92	0.48	1.75	0.89	0.47	1.70
Knew partner						
Very well (referent)						
Moderately well	1.26	0.90	1.76	0.99	0.60	1.63
Somewhat	2.03**	1.40	2.96	1.20	0.68	2.14
A little bit	1.48*	1.00	2.17	1.18	0.61	2.30
Not at all	1.80*	1.09	2.97	1.45	0.53	3.96
Repeat partner	0.85	0.63	1.14	0.85	0.63	1.15
Alcohol and Knew Partner Interactions						
No Alcohol * Knew Partner						
Heavy Alcohol * Moderately Well				1.58	0.79	3.16
Heavy Alcohol * Somewhat				2.33*	1.08	5.02
Heavy Alcohol * A Little Bit				1.80	0.79	4.10
Heavy Alcohol * Not at all				1.47	0.47	4.65
Some Alcohol * Moderately Well				1.66	0.54	5.10
Some Alcohol * Somewhat				3.69	0.81	16.74
Some Alcohol * A Little Bit				0.63	0.18	2.25
Some Alcohol * Not at all				2.88	0.26	32.20
Intercept	13.55	0.60	304.83	14.77	0.68	322.30

Note: \**p*-value <0.05, \*\* *p*-value <0.01.

More than half (55%) of first-year college students reported heavy episodic drinking prior to, or during, their last hookup experience (68% vs. 32% for non-penetrative and penetrative hookups, respectively,  $p = 0.03$ ). Alcohol use was positively associated with having a penetrative hookup; students who reported heavy alcohol use were 1.48 (95% CI: 1.21-1.81,  $p < 0.01$ ) times more likely to have a penetrative hookup compared to students who reported no alcohol use (see Table 2). Among students who had a penetrative hookup, 53% reported heavy episodic drinking and 72% reported using a condom. Alcohol use was not a significant predictor of condom use/non-use. See Table 3 for more details.

#### Hookups: relational factors

First-year college students reported knowing their hookup partner very well (20%), moderately well (22%), or somewhat well (21%). Further, 15% reported not knowing their hookup partner at all (76% vs. 24% for non-penetrative and penetrative hookups,  $p < .001$ , respectively). Students who had a penetrative hookup were more likely to have known their hookup partner very well (47%,  $p < .001$ ) (see Table 1). Nearly half (49%) reported hooking up with a repeat partner. Having a repeat partner was positively associated with having a penetrative hookup; students with a repeat hookup partner were 1.82 (95% CI: 1.50-2.21,  $p < 0.001$ ) times more likely to report a penetrative hookup compared to students who did not have a repeat hookup partner (see Table 2).

Partner familiarity was also associated with condom use. Students who knew their partner somewhat, a little bit, and not at all were, respectively, 2.03 ( $p < 0.01$ ), 1.48 ( $p < 0.05$ ), and 1.80 ( $p < 0.05$ ) times more likely to report condom use compared to students who knew their partners very well. Taking into account the interaction between partner familiarity and alcohol use, students who reported heavy alcohol and knowing their partner “somewhat well” were 2.33 times more likely to use a condom compared to students who reported knowing their partner very well ( $p < 0.05$ ) (see Table 3).

Nearly half (46%) of first-year college students reported enjoying their most recent hookup experience very much, whereas 39% of students enjoyed it somewhat. A sizeable minority of respondents reported experiencing (23%) or believed their partner experienced (34%) an orgasm during their most recent hookup experience. First-year college students who had a penetrative hookup were more likely to report they (76%) or their partner (73%) experienced an orgasm during the hookup compared to students who had a non-penetrative hookup (24% experienced an orgasm,  $p < 0.001$ ; 27% partner experienced an orgasm,  $p < 0.001$ ) (see Table 1).

Students who experienced, and/or their partner experienced, an orgasm were 2.93 ( $p < 0.01$ ) and 8.33 ( $p < 0.01$ ) times, respectively, more likely to have a penetrative hookup compared to hookup events where students and/or their partner did not experience an orgasm (see Table 2). Among students who did not enjoy their hookup at all, 65% reported heavy alcohol use, whereas 48% of students reported heavy alcohol if they enjoyed their hookup very much ( $p < 0.01$ ). Among students who used some alcohol during their hookup, 2% reported not enjoying their hookup at all and 49% reported enjoying it very much ( $p < 0.01$ ).

#### Hookups: cultural factors

There were no differences in the type of hookup by campus sex ratios. Campuses with higher levels of fraternity and sorority affiliations reported fewer penetrative hookups compared to campuses with no fraternity and sorority affiliations ( $p < .001$ ) (see Table 1). There was not an interaction between alcohol use and fraternity and sorority affiliations as it related to penetrative hookups or condom use; see Tables 2 and 3 for more details.

## Discussion

The findings of this analysis describe various ways in which first-year college students experience hookups – with individual, relational, and cultural factors affecting their sexual hookup scripts (Gagnon and Simon 1973). Despite research suggesting that hookups are associated with risk (Armstrong, Hamilton, and England 2010; LaBrie et al. 2014), our results suggest that first-year college students' hookups may be relatively “safe” (e.g. the majority include non-penetrative sexual behaviours, condom use, and familiar partners) and most report them to be pleasurable experiences. Thus, hookups may be a normative component of sexual experimentation and development for college students. Understanding the individual, interpersonal and cultural differences of hookups are important in aiding the development of interventions to continue to support first-year college students' positive and healthy sexual decision-making.

These findings highlight the demographic characteristics and behavioural correlates of hookups. Students who were female and lived on campus were more likely to have non-penetrative hookups. Prior work found that the oral sex was the most reported sexual behaviour among undergraduate college students with around three-quarters reporting this behaviour and Black women (58.1%) participating in oral sex less than White women (71.7%) (Buhi, Marhefka, and Hoban 2010). College women may see this a safer way to engage in hookup behaviours that protects their reputations under the sexual double standards that they face in hookup culture (Allison and Risman 2013; Kettrey 2016; Lovejoy 2015; Wade 2017). Future research is needed to understand first-year college women's perceived threat and susceptibility to STIs (including those that can be transmitted orally) in order to develop health promotion messages regarding oral sex and barrier method use (e.g. condom and dental dam use).

Students who were older and African American were more likely to have penetrative hookups. Consistent with other findings (Kuperberg and Padgett 2015), first-year college students are engaging in hookups. However, first-year students are having fewer hookups and drinking less alcohol highlighting the need to target interventions at these students to support the continuation of these lower risk behaviours. Although students of colour are less likely to engage in hookups than their White peers, the motivation to engage in penetrative sex may be related to the possibility of relationship formation (Hall and Tanner 2016; Kuperberg and Padgett 2016b). These differences may be due to contextual factors reinforcing sexual scripts; many of the universities in this sample were predominately White institutions, so students of colour who desire racial homophily were constrained to a limited number of potential partners. Thus, continued examination of hookup behaviours with diverse students is crucial in fully understanding the ways that students engage in sexual behaviours, particularly within the context of alcohol.

Importantly, the majority of first-year college students who engaged in penetrative hookups used condoms. In line with extant research (Kuperberg and Padgett 2015, 2016a; Lewis, Miguez-Burban, and Malow 2009; Lewis et al. 2012), heavy alcohol use was associated with increased penetrative hook-ups, yet most penetrative hookups that occurred with heavy alcohol use were condom protective. The relationship between alcohol and condom use was altered based on relational factors (e.g. partner familiarity). Specifically, among students who reported heavy alcohol use, the likelihood of condom use was higher with less familiar partners and lower with partners who were very familiar.

Hookups frequently occurred with a well (or moderately) known or repeat partner, suggesting that hookups could be one way students participate in developmentally appropriate sexual experimentation and could indicate a step in relationship formation (Garcia and Reiber 2008; Rhoades and Stanley 2014; Vrangalova, Bukberg, and Rieger 2014). Students were less likely to use condoms with partners who they knew very well. Students in relationships where they feel close and comfortable with their partners may choose to discontinue condom use and, in some cases, increase hormonal contraceptive use. (Ott et al. 2002). At the time of data collection, only 49.3% of college students reported using both a condom and another contraceptive method, however 61.8% of females reported using pills and 29.0% reported using the withdrawal method (ACHA 2011). However, it should be noted that based on the OCSLS' definition of hook-ups these students were not in exclusive relationships with their hookup partners. Interestingly, although heavy alcohol use increased students' likelihood of hooking up with someone they knew less well, it also was associated with increased condom use. Accordingly, the level of partner familiarity should remain a target of interventions to promote continued condom use even within sexual encounters with known and repeat partners (LaBrie et al. 2014).

Overall, sexual enjoyment during hookups was endorsed at a high level. Alcohol played a role in students' reported enjoyment, with higher proportions of students reporting enjoying the hookup with lower levels of alcohol. This enjoyment aligns with existing research that suggests college students experience more positive (e.g. sexual satisfaction) than negative (e.g. regret or guilt) reactions to a hookup (Owen et al. 2010; Owen and Fincham 2011; Snapp, Ryu, and Kerr 2015; Kuperberg and Padgett 2016b). Sexual pleasure is an important and appropriate motivation for students to engage in hookups (de Jong, Adams, and Reis 2018). Interventions that approach sexual health from a risk reduction paradigm and frame messaging around safety (e.g. related to condom use and at the intersection of alcohol and sexual behaviours) and pleasure (e.g. increased sexual enjoyment with lower levels of alcohol) may be more relevant for college students (Ware, Thorpe, Tanner 2019).

Campus specific factors were related to hookup scripts; there were less reported penetrative hookups on campuses with a higher ratio of fraternity and sorority affiliations. This may be due to social norms around sexual behaviours that affect the ways in which students associated with fraternities and sororities are expected to negotiate sexual scripts that may be protective. It could also be fraternities and sororities have less impact on first-year students who have fewer interactions with them on their campus (e.g. before rush). Similar to previous research (Kuperberg and Padgett 2015), this analysis did not find an effect of campus sex ratios on hookups. Other research using OCSLS data show that on campuses where there are more women

than men, women engage in hookups more with other women, which suggests that sex ratios may shape cultural scripts in other ways (Adkins et al. 2015; Kuperberg and Padgett 2015). This behaviour may not yet be reflected in first-year college students' hookup scripts (e.g. more partnering with individuals in their residence halls). More work in this area is needed to understand how other campus factors (e.g. alcohol and sex norms) may affect the sexual health of students, especially on more diverse campuses (i.e. historically Black colleges and universities as compared to predominantly White institutions) (Hall and Tanner 2016).

### Limitations and future directions

Although this analysis used a large and comprehensive dataset, our analysis is limited in several ways. First, the term “hookup” was intentionally undefined in the OCSLS, thus results related to specific sexual behaviours may vary depending on students' perceptions of what is a hookup, which may vary significantly by a variety of factors (e.g. race, ethnicity, gender and campus context). Second, while data were obtained from 22 institutions, they represent a purposive sample of first-year college students and may not reflect the full sexual repertoire of the larger first-year US college student population. In particular, the sample was predominantly White and heterosexual, which may not reflect the variation in behaviours – sexual and alcohol – of a more diverse college population. Thus, future research should utilise qualitative methods that allow for diverse students (e.g. students of colour and sexual and gender minorities) to describe their hookup scripts, experiences and motivations. Having sexual health programming tailored to the definitions and views of what hook-ups might look like for students of different races and cultures may assist in risk reduction and promote healthy sexual development, including pleasure.

### Conclusions

Hookups, especially during an individual's transition to college, remain a unique point of study as they may provide developmentally appropriate avenues for sexual experimentation, agency, and pleasure above and beyond a focus on reducing negative sexual health outcomes (e.g. STI acquisition from condomless penetrative behaviours). College is one important part of many young people's transition toward independence; it is important to help support students attending them to ensure that their experiences are healthy, safe, and pleasurable. Thus, as we consider ways to support college students' sexual health, we need to be innovative and consider the new ways and methods that young people are meeting partners (e.g. through sexual networking apps) and using these technologies for improving the sexual health of young people, particularly at these important transitions.

### Disclosure statement

No potential conflict of interest was reported by the author(s).

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