



Research Article

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Understanding College Students Perceptions of “What is Sex”?

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Abstract

Background: While there is strong consensus that vaginal and anal intercourse both constitute “having sex”, there is far less agreement about other sexual behaviors which also increased risk. The purpose of this report is to examine responses regarding which sexual interactions are classified as “having sex” by university students.

Methods: We completed a cross-sectional survey of 1991 college students at 2 universities using a self-administered questionnaire during 2010 and 2011. The main dependent variable examined dichotomous responses to a series of 11 items regarding whether respondents considered various sexual behaviors as “sex.”

Results: Penile-vaginal intercourse and penile-anal intercourse was endorsed as “sex” by 94% and 76% of respondents, respectively. Receiving oral-genital contact from a partner and providing oral-genital contact to another person were both classified as “sex” by about 45% of college students. Less than 25% of respondents reported that other behaviors including touching/fondling genitals, deep kissing, oral contact with breasts, or touching breasts represented “sex”.

Conclusions: Given the ambiguous definitions of what constitutes “sex” among young adults, these findings underscore the need to use explicit behavior-specific terminology in sexual health promotion, research, educational and clinical settings to clearly communicate risk.

Keywords: Sexual Behavior; Terminology; Risk; Sexual Definitions; Cross-Sectional Studies

Introduction

Although there is ongoing research investigating sexual behaviors in adolescents and young adults, there is substantial ambiguity surrounding how people in this age group define specific sexual behaviors. While the term “sexual intercourse” most commonly denotes penile-vaginal penetration, a variety of views exist concerning what constitutes “having sex.” The term “sex” can also be used to describe various forms of sexual intercourse such as the act of vaginal, anal, or manual (using hands), or oral-genital

stimulation, with a partner [1]. Still, many researchers maintain that “sex” is difficult to define and can differ across gender, age, and scenario [2-8]. Sex can be regarded as a risky behavior as it may lead to unplanned pregnancies and Sexually Transmitted Infections (STIs), including Human Papilloma Virus (HPV) and Human Immunodeficiency Virus (HIV). In 2015-2017, 40% of adolescents aged 15-19 reported ever having had penile-vaginal intercourse and 45% reported having oral sex.



Moreover, the proportion of young people who have had sexual intercourse increases rapidly as they age through adolescence; 95% of 25-year-olds reported having had sexual intercourse [9]. A greater understanding of these definitions is needed to better estimate disease risk associated with these behaviors and as well as to inform public health interventions to mitigate these risks.

Several studies have examined how university students in the United States perceive various forms of sexual contact. A 1999 publication of data collected in 1991 reported that only 40% of 599 college students identified either receiving or providing oral sex as "having sex" compared with 81% who endorsed penile-anal intercourse and 99% who endorsed penile-vaginal intercourse as "having sex" [7]. Data collected from university students in 1999, 2001, 2007 and 2010 reported similar findings [10-12]. A more recent study published in 2015 based upon data from 594 undergraduate students found that nearly one-half of students expressed uncertainty about whether oral sex constituted "having sex"; where approximately 25% selected "probably not sex" and 23% selected "probably sex." In addition, certainty that a behavior counted as "having sex" differed when rating their own behaviors compared to rating a partner's behaviors [8]. While there is strong consensus, although not unanimity, that vaginal intercourse constitutes "having sex", there is far less agreement about other sexual behaviors. These inconsistent definitions of sex may lead adolescents and young adults to underestimate the health risks and implications associated with various types of sexual activity, particularly anal and oral sex. The purpose of this report is to examine responses regarding which sexual interactions are classified as "having sex" by university students.

Methods and Materials

Design

This cross-sectional study involved completion of a self-administered questionnaire by college students at two different universities. This research protocol was approved by the Social and Behavioral Sciences Institutional Review Board (SBSIRB) at the University at Buffalo (Study # 3065: Adoption of the HPV vaccine: A pilot study of knowledge and attitudes in western New York) and all participants provided assent.

Study Population

Male and female students were recruited from two universities during two academic years (2010 and 2011) using an approach as previously described [13]. Students were recruited using a convenience sample using similar approaches. At university A, eligible students were enrolled from various health courses and received extra credit, while at university B students were enrolled in general psychology classes and were offered research credit toward the fulfillment of their course requirements in exchange for their participation. These courses were targeted based upon their

inclusion of students from across varied academic majors and class levels. Respondents completed an Internet-based survey outside of class time. The analytic file was restricted to persons who self-identified as ages 18-26 years since these ages were considered to reflect a typical college age population.

Survey Instrument

Data presented in this paper focuses on a module of a larger main survey, which contained sections on respondent demographics, sexual and health behaviors, knowledge, and awareness about Human Papilloma Virus (HPV), and HPV vaccination. Respondents at both universities completed the same survey. The core survey items remained unchanged between 2010 and 2011, however selected modules were varied.

Outcome Measure

The main dependent variable examined dichotomous responses to a series of 11 items regarding whether respondents considered various sexual behaviors as "sex" [7,14]. Respondents were asked "Would you say you 'had sex' with someone if the most intimate behavior you engaged in was... (mark yes or no for each behavior)." Each of the items was phrased in a manner which was neutral about gender or sexual orientation (Table 1-5).

Covariates

We explored the impact of various independent variables including gender (male, female), age (18-19, 20-26 years), school (university A, university B), race (White, African American, Asian, other), ethnicity (Hispanic, non-Hispanic), and country of origin (US born, foreign born).

Statistical Analyses

Descriptive statistics and chi-square tests were used to explore associations between the dependent and independent variables. All significance testing was assessed using a p-value of <0.05. Analyses were completed using SPSS version 21.0.

Results

The final analytic file contained 1991 students ages 18-26 years, with 815 respondents during calendar year 2010 and 1176 from 2011. As shown in Table 1, respondents were 59% female, 67% were ages 18-19 years, 77% white, 94% non-Hispanic and 89% reported being born in the US. Nearly all respondents reported having sex with opposite gender partners (e.g., heterosexual). Table 2 summarizes responses addressing whether respondents would say that they "had sex" based on a series of statements describing various intimate behaviors. Overall, 94% of respondents agreed that penile-vaginal intercourse represented "sex." Penile-anal intercourse was endorsed as "sex" by 76%. Receiving oral-genital contact from a partner and providing oral-genital contact to another person were both classified as "sex" by about 45% of

college students. Between 20% and 25% of respondents reported that another person touching/fondling their genitals or touching/fondling someone else's genitals represented "sex". Between 12% and 15% of respondents stated that they "had sex" with deep kissing, oral contact with another person's breasts, someone else having contact with their breasts, another person touching/fondling their

genitals or touching/fondling someone else's genitals. Significantly more males than females classified touching/fondling another person's breasts, someone touching/fondling their genitals, or deep kissing as "having sex". Females more commonly reported oral-genital contact and penile-anal intercourse as "having sex."

Table 1: Selected demographics of college student respondents, by gender, 2010 & 2011.

	males (n=781)		females (n=1175)		total (n=1956)		p-value
	#	%	#	%	#	%	
Age (in years)							
18-19	494	63.70%	816	70.30%	1310	67.70%	<0.001
20-26	281	36.30%	345	29.70%	626	32.30%	
Race							
White	601	77.00%	911	77.50%	1512	77.30%	0.015
Black	26	3.30%	52	4.40%	78	4.00%	
Asian	94	12.00%	159	13.50%	253	12.90%	
other/unknown	60	7.70%	53	4.50%	113	5.80%	
Ethnicity							
Hispanic	39	5.00%	69	5.90%	108	5.50%	0.413
Non-Hispanic	739	95.00%	1105	95.10%	1844	94.50%	
County of Origin*							
US born	283	84.00%	743	91.80%	1026	89.50%	<0.001
Foreign born	54	16.00%	66	8.20%	120	10.50%	
University							
A	465	59.50%	507	43.10%	972	49.70%	<0.001
B	316	40.50%	668	56.90%	984	50.30%	

Subcategories may not sum to column totals due to missing data.

*Data for 2011 only.

Table 2: Responses among college students to survey items regarding "What is Sex?" by gender.

Would you say you "had sex" with someone if the most intimate behavior you engaged in was....?	# & % indicating "had sex: *						p-value
	males (n=781)		females (n=1175)		total (n=1956)		
	#	%	#	%	#	%	
Deep kissing ("French" or tongue kissing)?	152	19.80%	143	12.30%	295	15.30%	<0.001
Person touches your breasts/nipples?	94	12.30%	148	12.80%	242	12.60%	0.734
You touch other's breast/nipples?	161	21.00%	90	7.80%	251	13.10%	<0.001
Oral contact on your breasts /nipples?	104	12.60%	146	13.50%	250	13.00%	0.531
Oral contact on other's breasts/nipples?	165	21.50%	94	8.10%	259	13.40%	<0.001
You touch other's genitals?	182	23.70%	223	19.20%	405	21.00%	0.017
Person touches your genitals?	216	28.20%	245	21.10%	461	23.90%	<0.001
Oral contact with other's genitals?	306	40.10%	524	45.20%	830	43.10%	0.027
Oral contact with your genitals?	338	44.10%	525	45.30%	863	44.80%	0.607
Penile-Anal intercourse?	553	72.30%	907	78.50%	1460	76.00%	0.002
Penile-Vaginal?	711	92.60%	1096	94.10%	1807	93.50%	0.191

*Number and percentage of respondents who agreed with each statement.

As shown in Table 3, there were no differences by age group in the proportion of persons identifying penile intercourse and anal intercourse as “sex”; however, a slightly larger proportion of persons in the 20-26-year-old group compared to persons ages 18-19 years consistently endorsed oral and/or manual contact with breasts and genitals as “sex”. Table 4 presents responses stratified

by country of origin. Respondents who self-identified as foreign born were more likely than US-born respondents to identify oral or manual breast contact, manual genital contact and deep kissing with another person as “sex”, while a larger proportion of US-born respondents identified penile-vaginal intercourse and anal intercourse as “sex”.

Table 3: Responses among college students to survey items regarding “What is Sex?” by age group.

Would you say you “had sex” with someone if the most intimate behavior you engaged in was	# & % indicating “had sex: *						p-value
	18-19 (n=1312)		20-26 (n=626)		total (n=1938)		
	#	%	#	%	#	%	
Deep kissing (“French” or tongue kissing)?	188	14.50%	103	16.70%	291	15.20%	0.218
Person touches your breasts/nipples?	145	11.20%	101	16.30%	246	12.90%	0.002
You touch other’s breast/nipples?	150	11.60%	89	14.40%	239	12.50%	0.086
Oral contact on your breasts /nipples?	153	11.80%	95	15.40%	248	13.00%	0.03
Oral contact on other’s breasts/nipples?	152	11.70%	103	16.70%	255	13.30%	0.003
You touch other’s genitals?	286	22.10%	170	27.60%	456	23.90%	0.008
Person touches your genitals?	253	19.50%	147	23.80%	400	20.90%	0.031
Oral contact with other’s genitals?	547	42.20%	308	50.00%	855	44.70%	0.001
Oral contact with your genitals?	531	41.10%	292	47.40%	823	43.10%	0.009
Penile-Anal intercourse?	978	75.90%	470	76.30%	1448	76.10%	0.861
Penile-Vaginal?	1205	92.90%	588	94.80%	1793	93.50%	0.108

*Number and percentage of respondents who agreed with each statement.

Table 4: Responses among college students to survey items regarding “What is Sex?” by Country of Origin.

Would you say you “had sex” with someone if the most intimate behavior you engaged in was...?	# & % indicating “had sex: *						p-value
	US (n=1027)		FB (n=121)		total (n=1141)		
	#	%	#	%	#	%	
Deep kissing (“French” or tongue kissing)?	107	10.60%	22	19.10%	129	11.50%	0.007
Person touches your breasts/nipples?	97	9.60%	31	26.70%	128	11.40%	<0.001
You touch other’s breast/nipples?	83	8.20%	30	25.90%	113	10.10%	<0.001
Oral contact on your breasts /nipples?	103	10.20%	26	22.40%	129	11.50%	<0.001
Oral contact on other’s breasts/nipples?	97	9.60%	25	21.60%	122	10.80%	<0.001
You touch other’s genitals?	215	21.30%	40	34.50%	255	22.70%	0.001
Person touches your genitals?	181	17.90%	34	29.30%	215	19.10%	0.003
Oral contact with other’s genitals?	460	45.60%	54	47.00%	514	45.70%	0.78
Oral contact with your genitals?	453	45.00%	49	42.20%	502	44.70%	0.574
Penile-Anal intercourse?	805	79.90%	73	62.90%	878	78.20%	<0.001
Penile-Vaginal?	970	95.80%	92	78.00%	1062	94.00%	<0.001

*Number and percentage of respondents who agreed with each statement.

US=US born; FB=foreign born, data for this variable collected only during one survey year.

Discussion

The importance of standardized terminology in sexual and reproductive health cannot be underestimated since understanding how individuals define “sex”, abstinence, safe sex, and other

concepts has significant implications for sexual health [15]. With regard to sexual violence, persons engaging in sexual behaviors need to provide clear and affirmative consent, which requires a shared understanding of terms like “sex” and/or using more explicit language to reference sexual behaviors. In addition, the

federal definition of rape includes all penetrative sexual behaviors, including oral penetration. Ambiguities regarding specific sexual behaviors not only pose challenges for physicians and health educators, but also for researchers and policy makers who rely upon self-reported data on the frequency and prevalence of sexual behaviors, which rests, in part, on a common understanding of the questions being asked and the terms being used. However, having ambiguous definitions of the term “sex” is not unique to young adults in America, as a series of studies conducted in Australia, Canada, and the United Kingdom have also demonstrated considerable variability in how university students define “having sex” [16-19].

Our findings did reveal some differences by gender regarding which interactions were viewed as “having sex”. Although these differences were statistically significant, they were relatively modest quantitatively. Findings in this report and in similar studies among college populations in the United States, tend to diminish the significance and hazards of oral sex. Adolescents tend to view oral sex as less risky and characterize this behavior as “casual” and “non-intimate” [20]. Oral sex is effective in transmitting various viral and bacterial pathogens [21].

The college environment appears to exert a strong influence on sexual attitudes and behaviors [15,21-23] which may explain in part the somewhat higher proportion of persons ages 20-26 years who endorse interactions involving oral and/or manual contact with breasts and genitals as “having sex”. It is also possible that these older students have simply had more time to engage in sexual behaviors and/or may have resolved earlier conflicts over personal and religious values which might have resulted in inconsistencies in their personal definitions of whether they had engaged in sexual activities.

Interpretation of responses to “what is sex?” among foreign-born persons is more difficult to understand as this group of respondents included various groups of persons of Asian ancestry (India, Chinese, Korean, Japanese, etcetera) and overall is quite heterogeneous. Foreign students studying in the U.S. bring different cultural values regarding sex and gender interactions. As a group, they more frequently classified non-penetrative breast and genital contact as “having sex” while less frequently labeled penile-anal and penile-vaginal intercourse as “having sex”. It is also possible that this group might have had comprehension problems with these items, even with the explicit definitions provided. Foreign born studies are unlikely to have had formal sex education sessions as are routinely provided in the United States and may be less familiar with terms like “genitals,” “vagina,” “oral contact,” or even “intercourse.” Another possibility is that, notwithstanding the issue of heterogeneity, this group overall likely holds more conservative sexual values than American students.

Table 5 compares results from selected surveys of American college students based on identical survey items. Overall, there appears to be limited changes over time and continued ambiguity regarding which personal interactions are perceived as “having sex” among college students. Among the behaviors assessed there was a relatively strong consensus about the concept of “penetration”; with penile-vaginal intercourse being almost universally included as “sex” and penile-anal intercourse generally included as “sex”. A more recent paper by Sewell, Strassburg [8] suggested the definitions of sex are influenced by several contextual factors including whether the behavior being assessed is that of the respondent or their significant other; the order in which questions are asked relating to behaviors by the respondent and their significant other and the presence or absence of an orgasm [8].

Table 5: Comparisons across selected studies, responses among college students to survey items regarding “What is Sex”?

Would you say you “had sex” with someone if the most intimate behavior you engaged in was ...?	% indicating “had sex: *				
	Sanders & Reinisch, 1999 (Sanders & Reinisch, 1999) [7]	Gute et al,2008 (Gute et al., 2008) [10]	Hans et al., (Hans J., 2010) 2010 [12]	Current study	Sewell & Strassberg, 2015**
	n=599 students in 1991	n=839 students in 1999 & 2001	n=477 students in 2007	n=1956 students in 2010 & 2011	n=594 students (data collection year unavailable)
Deep kissing (“French” or tongue kissing)?	2%	8%	6%	15%	0.80%
Person touches your breasts/nipples?	3%	9%	5%	13%	3.50%
You touch other’s breast/nipples?	3%	9%	4%	13%	3.40%
Oral contact on your breasts / nipples?	3%	10%	6%	13%	NA
Oral contact on other’s breasts/ nipples?	3%	9%	6%	13%	NA
You touch other’s genitals?	14%	16%	9%	21%	8.90%
Person touches your genitals?	15%	15%	8%	24%	9.40%
Oral contact with other’s genitals?	40%	40%	20%	43%	24.60%

Oral contact with your genitals?	40%	39%	19%	45%	24.60%
Penile-Anal intercourse?	81%	81%	78%	76%	70%-74.1%***
Penile-Vaginal?	99%	100%	98%	94%	88.9%-98.7%***

- a) Percentage of respondents who agreed with each statement.
 b) Participants selected "Definitely Sex" on a four-point Likert-type scale.
 c) Range dependent on whether orgasm occurred.

Consistent with previous studies, we found that less than one-half of respondents defined receiving or providing oral-genital contact as "sex", which may reflect Sanders and Reinisch's notion of "technical virginity" in which sexual contact which does not culminate in penetrative intercourse is not considered to be "sex" [7]. This is best recognized during the 1998 debate regarding whether former President Bill Clinton engaged in "sex" with Ms. Monica Lewinsky during several alleged encounters between 1995 and 1997. These attitudes may also be reflective of societal and media representations minimizing the consequences of oral sex combined with a traditional cultural emphasis on penetration as a defining feature of sex. In addition, school-based sex education programs and popular media may have contributed to the "normalization" of oral-genital contact [24]. However, this finding is especially concerning given the risk of transmitting STIs through oral-genital contact (Prevention, 2013) [25] as well as through other intimate behaviors associated with "hooking up" and "friends with benefits" relationships, all of which involve varying degrees of skin-to-skin contact facilitating spread of potential infections.

Strengths of our current study include the use of survey items which are identical to those used in similar studies, data collection over two time periods at two large state universities, a sizable study population, and a focus on a typical college age range of 18-26-year-olds. These findings are most generalizable to similar college student populations. One potential limitation of our study is the reliance upon a convenience sample of mostly whites and self-identified heterosexual respondents. Defining sex as solely vaginal/anal intercourse may exclude women in same-sex relationships from having sex at all and seems to inadvertently premise sex on male participation. Accordingly, it might be necessary to modify survey items on how "sex" is defined to be more reflective of the sexual diversity of college students and to acknowledge the importance of using more inclusive language in healthcare setting and health education/promotion activities. In addition, progress has been made since 2011 with respect to accessing available resources and improving LGBTQ+ sexual health among college students. Other limitations include the lack of contextualization of items in terms of interpersonal behaviors within or outside of established relationships, potential differences in responses by culmination of orgasm and the lack of psychosocial measures. We were unable to assess for racial/ethnic differences in response beyond an assessment of "foreign born".

Conclusions

Research which asks questions about sexual practices can be accurate and reliable only if there are clear definitions of different sexual activities. These findings underscore the need to use behavior-specific terminology in clinical settings, sexual health promotion, sex/behavioral research, and sexual education, given the potentially ambiguous definitions of what constitutes "sex" among young adults.

Sexual health education campaigns must consider the range of popular expressions that can be used to express a single concept, while simultaneously keeping in mind the variability in meaning that may be attached to a single term. Clinicians need to be similarly attuned to the range of expressions that patients may use to describe their sexual behaviors and reproductive health to accurately assess risk and to provide appropriate patient care and disease prevention strategies.

Our findings contain a constructive message for sexual health interventions. If definitions of "what is sex?" are malleable, then the potential exists to develop more explicit definitions which could result in improved sexual health awareness and enhanced recognition of modifiable risky behaviors. Healthcare providers and public health professionals need to acknowledge this ambiguity regarding how young adult populations define "sex" to ensure that services and preventive interventions are consistent with a clearly communicated definition of "what is sex?"

Key Messages

- There is a strong consensus among heterosexual college students that penile-vaginal and penile-anal intercourse constitute "having sex."
- There is ambiguity among heterosexual college students surrounding whether oral-genital contact and non-penetrative breast and genital contact represent engaging in "sex".
- While responses were statistically different by gender and by age group, the magnitude of these difference was generally modest.
- Respondents who self-identified as foreign born were more likely than US-born respondents to identify non-penetrative breast and genital contact as "sex".

e) These findings underscore the need to use explicit behavior-specific terminology in sexual health promotion, sexual violence prevention, behavioral research, and educational settings.

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Disclosure statement

The authors report no conflicts of interest.

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