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Virginity Lost, Satisfaction Gained? Physiological and Psychological Sexual Satisfaction at Heterosexual Debut

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Despite the literature's focus on (hetero)sexual initiation, little is known about the degree to which young people are satisfied by their first vaginal intercourse experience, let alone the factors that predict satisfaction. This study analyzed data from a cross-sectional survey of 1,986 non-Hispanic White and Black 18- to 25-year-old respondents from four university campuses. Respondents were asked to rate the degree to which their first vaginal intercourse was physiologically and psychologically satisfying. Both Black and White women were significantly less likely than Black and White men to experience considerable or extreme satisfaction at first vaginal intercourse, particularly physiological satisfaction. Among all four gender–race groups, being in a committed relationship with one's sexual partner greatly increased psychological satisfaction, particularly among women. Experiencing less guilt at first sexual intercourse was also strongly associated with psychological satisfaction for women. Developing sexual relationships with partners they care for and trust will foster satisfaction among young people at first vaginal intercourse. These findings highlight strong gender asymmetry in affective sexual experience.

¹Although vaginal intercourse has been long portrayed as the traditional way to lose one's virginity, a number of other behaviors are increasingly associated with virginity loss, especially among same-sex couples (Carpenter, 2005; Thompson 1995; Tolman 2002). Despite this increasing range of meanings, our article refers to virginity loss as vaginal intercourse.

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No sexual milestone carries as much cultural significance as virginity loss, which we define here as first vaginal intercourse.¹ The experience of first coitus is imbued with enormous personal and social meaning, representing an important rite of passage into sexual adulthood (Carpenter, 2005), as well as important connections to future sexual experiences and sexual health. First vaginal intercourse often symbolizes an important touchstone of adolescent development, one in which young people learn to engage in romantic or sexual relationships (O'Sullivan, Cheng, Harris, & Brooks-Gunn, 2007).

Both the sexuality and public health fields have devoted considerable attention to the timing, context, and sequelae of adolescents' heterosexual initiation (Buhi & Goodson, 2007; Michels, Kropp, Eyre, & Halpern-Felsher, 2005; Rosenthal et al., 2001; Skinner, Smith, Fenwick, Fyfe, & Hendriks, 2008). We have seen great interest in *who's* “doing it,” *when*, whether

contraceptives are used, and the other kinds of sexual behaviors and relationships to which “losing it” leads. Far less attention has been devoted to the degree to which young people actually gain satisfaction from their first intercourse experience, let alone the different dimensions of that satisfaction (e.g., physical, emotional, and relational). Yet, initial sexual experiences that are positive, satisfying, and healthy have the potential to lay an important foundation for young people’s sexual and relationship development (Blank, 2007; Wight et al., 2008), and thus deserve scholarly attention.

The majority of the literature that does explore the subjective experience of first intercourse tends to highlight *lack* of positive affect, especially among young women (Weis, 1983). These studies reveal significant gender disparities in the enjoyment of first heterosexual, focusing on women’s less frequent reports of excitement and pleasure than men, combined with significantly greater reports of guilt, nervousness, tension, embarrassment, sadness, and fear (Darling, Davidson, & Passarello, 1992; Guggino & Ponzetti, 1997; Sprecher, Barbee, & Schwartz, 1995). In Sprecher et al.’s survey of 1,600 college students, on a pleasure scale that ranged from 1 (*not at all*) to 7 (*a great deal*), women rated first intercourse a 2.95 compared to men’s 5.00.²

Few studies have explored satisfaction explicitly, focusing instead on phenomena such as pleasure or guilt (Moore & Davidson, 1997), degree of personal control (Skinner et al., 2008), or overall quality (Thompson, 1990). However, evidence suggests a similar gender asymmetry with satisfaction. Darling et al. (1992) found that only 28% of young college women reported both physiological and psychological satisfaction, compared with 81% and 67% of men, respectively. More than 15 years later, an update on the prevalence of satisfaction at first vaginal intercourse is needed.

Several reasons can help explain the gendered disparities we have just described. For example, women’s access to sexual enjoyment and satisfaction, let alone desire, can be compromised at the onset by a sexual double standard that expects or even promotes young men’s masturbation and (hetero)sexuality, but stigmatizes the same sexual behaviors in young women (Holland, Ramazanoglu, Sharpe, & Thomson, 1998; Tolman, 2002). Women’s virginity holds a greater social value than men’s, often both perceived and portrayed as a gift to give away to the right (male) partner (Carpenter, 2002, 2005); women may be disappointed by the actual experience after so much buildup is given to its importance and significance. Women are also much more likely than men to have a first intercourse experience that is unwanted or forced (Laumann, Gagnon, Michael, & Michaels, 1994), which can drastically shape

the overall affective experience. Finally, physiological differences between women and men, as well as greater cultural premium on men’s orgasm and on vaginal intercourse in general (as opposed to the sexual activities, such as oral sex, that are more affiliated with women’s orgasm), can also contribute to women’s lesser sexual satisfaction. For such reasons, women are significantly less likely than men to experience an orgasm during their first intercourse (Guggino & Ponzetti, 1997).

Although these gender inequalities run deep, some literature indicates a potential lessening of the asymmetry between young men and women at first intercourse. In her analysis of the meanings of virginity loss among 18- to 35-year-old respondents, Carpenter (2002) found that gender differences in interpretation of men’s and women’s sexual scripts were more pronounced among older than younger participants, suggesting “a possible convergence between women and men in the past ten years” (p. 354). Thompson (1995), in her investigations of U.S. young women’s first forays into sexuality, found that women’s disadvantage and disempowerment may be waning. Young men’s sexual scripts may be in flux, too (Holland, Ramazanoglu, & Thomson, 1996). For example, an increasing number of young men want women to initiate sexual activity (Dworkin & O’Sullivan, 2005).

To what degree might these shifting sexual scripts affect young women’s and men’s satisfaction at first intercourse? According to one recent survey of approximately 200 young Canadians, the answer may be *considerably*, especially if one emphasizes the emotional versus the physical aspects of first intercourse (Tsui & Nicoladis, 2004). Although only 35% of women versus 62% of men in this study reported physical satisfaction at first intercourse, 56% of men and 54% of women reported psychological satisfaction. Also, 76% of men and 72% of women reported no regrets about first intercourse. (Notably, however, women commonly experienced pain at first intercourse [52%] and infrequently reported orgasm [11%] or physical satisfaction [34%.]) Like Carpenter (2002), authors Tsui and Nicoladis considered whether the gender similarity in their findings reflected a shift in the “sexual practices of young people toward more equally balanced engagement in discussions and decisions related to sexual activity in general and first intercourse in particular” (p. 102). Needed is a similar examination of U.S. youth, ideally with a larger sample, to explore young men’s and women’s physiological and psychological satisfaction at first heterosexual intercourse.

Although gender has been the main facet explored in the literature, several other factors are hypothesized to influence affective experience at first heterosexual. An exploration of *race* and satisfaction at first intercourse is also needed, or at the very least a study including a greater subsample of non-White respondents. In comparison to the impressive volume of scholarship on the intersection of gender and heterosexual debut, we know next to nothing about the intersection of race and

²As cited in Hyde and Jaffee (2000), Weis (1983) used the term “Peggy Lee Syndrome” (named after her song, “Is That All There Is?”) to describe adolescent girls’ reaction to first intercourse.

affective experiences at first intercourse.³ Indeed, most studies of affect and heterosexual debut are based, entirely or almost entirely, on White samples. This absence of youth of color is regrettable, given that race and ethnicity *have* been shown to influence certain aspects of sexual debut, including its timing (Feldman, Turner, & Araujo, 1999; Santelli, Lowry, Brener, & Robin, 2000), the progression of sexual activities leading to coitus (Feldman et al., 1999; O'Sullivan et al., 2007), and other sexual behaviors, such as multiple partnerships (O'Donnell, O'Donnell, & Stueve, 2001; Santelli, Brener, Lowry, Bhatt, & Zabin, 1998).⁴ An analysis of race and the meanings and subjective experiences of first intercourse, including satisfaction, is overdue.

In addition to gender and race, other possible but not always empirically proven influences on first sexual intercourse experiences include the following factors: *age* at first intercourse, with both early and late sexual initiators having the potential for longer-term sexual functioning issues such as problems with arousal and orgasm and, therefore, perhaps less likely to experience satisfaction at first vaginal intercourse (Sandfort, Orr, Hirsch, & Santelli, 2008); *partner's age* or the *age gap* between partners, with larger age gaps associated with greater likelihood of intercourse occurring at all in young people's relationships (Kaestle, Morisky, & Wiley, 2002) and lower rates of contraceptive use when intercourse does occur (Darroch, Landry, & Oslak, 1999), but which have been unexplored for influences on satisfaction; *type of relationship with one's first intercourse partner*, with closer or longer-term relationships hypothesized to predict greater satisfaction, especially psychological; *levels of guilt and anxiety at first intercourse*, which are likely to be indirectly related to level of satisfaction; whether one is *under the influence of alcohol or drugs* at the time of first intercourse, which are phenomena commonly linked to sex among teenagers and young adults (Cooper, 2002), but one that is likely to undermine level of satisfaction; *type of consent* provided, with non-consensual sex hypothesized to predict lack of satisfaction; *contraceptive use* at first intercourse, which, given its potential to alleviate concern regarding pregnancy or disease, may increase satisfaction; and finally, *religiosity*, with stronger religiosity associated with deeper guilt about sex, as well as less sexual knowledge—both of which could undermine satisfaction (Regnerus, 2007).

³We also know very little about *social class* and affective sexual experiences, although social class is thought to influence sexual behaviors, such as age at first heterosexual intercourse and condom use. Regrettably, the data available in this study render us unable to examine the effects of social class. That said, the overall class distribution and heterogeneity are likely to be much smaller in a sample of college students compared to a sample from the general population.

⁴Although as O'Sullivan et al. (2007) pointed out, the literature has focused much more on racial differences in *behaviors* than in the meanings of those behaviors or the relationships in which they take place.

We had the opportunity to explore these factors with a sample of approximately 2,000 U.S. college students who reported on the degree to which they were physiologically and psychologically satisfied at first vaginal intercourse.

Method

Participants

Students ($N = 3,186$; 2,030 women and 1,155 men) at four different universities—public universities in Texas and Wisconsin, an historically Black university in North Carolina, and a religiously affiliated private university in North Carolina—volunteered to participate in an anonymous survey about sexual behavior and attitudes. The survey was administered in lower and upper division classes in general education, social sciences, business, and family studies.

Procedures

In the data collection process, the principal investigators at Wisconsin (J. Kenneth Davidson) and Texas (Nelwyn B. Moore) obtained cooperation from numerous professors at each university. A total of 57 faculty members were approached, and 53 permitted investigators to use their classes (four said “no” due to pending class work during the week they were approached). During the class period devoted to the survey, students were informed by the investigators that they were conducting a study, which had been approved by the institutional review board (IRB) of their campus, concerning the sexual attitudes and behaviors of college students. The investigators assured potential respondents that their participation was voluntary and anonymous. After students were given a cover letter, certifying IRB approval, and a copy of the questionnaire, they were instructed that if they did not wish to participate, they were to return the questionnaire incomplete. No incentives of any kind were offered. After completing the questionnaire, which took approximately 45 min, the student deposited it into a ballot box at the front of the room before exiting. A research assistant monitored the return of the questionnaires. Response rates were in excess of 90%.

The sex ratio of the participants was a function of the classes available in which to conduct the survey. The number of young men in the sample was a function of the number of men enrolled in the classes selected, and not of men declining to participate in the study.

Inclusion and Exclusion Criteria

Given our interest in premarital sexual activity, the sample was limited to never-married respondents (which

excluded 173 married, divorced, separated, or widowed students—5% of the total sample). Students who identified as lesbian, bisexual, or gay ($n = 65$; 2% of the sample) were also excluded; due to the prohibitively few respondents from sexual minority populations, we decided to focus on those respondents primarily engaged in heterosexual behaviors.

Compared to non-Hispanic Whites ($n = 2,271$) and Blacks ($n = 650$), the sample contained exceedingly small numbers of Hispanic ($n = 165$), Asian ($n = 54$), American Indian ($n = 13$), or multiracial ($n = 15$) students to conduct separate analyses by gender and race or ethnicity. The sample was thus restricted to non-Hispanic Whites and Blacks.

Respondents older than age 25 ($n = 257$) were also excluded, as were graduate students ($n = 9$) and those who gave no response ($n = 2$) or who responded “not applicable” ($n = 16$) to the question on class standing.

Our research question in this article pertains to satisfaction at first intercourse. Thus, only students who had had vaginal intercourse at least once were included in the analyses (76% of the total sample).

These exclusion and inclusion criteria resulted in a final sample of 1,986 students, with 272 Black women, 967 White women, 213 Black men, and 534 White men.

Measures

Sexual satisfaction. Respondents were asked, “When engaging in sexual intercourse for the FIRST time, was the experience physiologically (i.e., Did it feel good?) satisfying for you?” (*physiological satisfaction*); and “When engaging in sexual intercourse for the FIRST time, was the experience psychologically (i.e., emotionally) satisfying for you?” (*psychological satisfaction*). Responses included *not at all*, *slightly*, *moderately*, *considerably*, and *extremely*. These questions, not part of a scale, were created and piloted by the survey investigators. For regression analyses, we dichotomized the variable into those reporting *considerable* or *extreme* satisfaction and those reporting *no*, *slight*, or *moderate* satisfaction. We did so because we wanted to focus on the presence of satisfaction, given the absence of positive sexual health indicators in the literature.

Statistical Analyses

Significant race–gender interaction warranted four separate regressions, one for each race–gender group (Black women, White women, Black men, and White men). We used separate multivariate logistic regressions to explore which factors could significantly predict physiological and psychological satisfaction at first sexual intercourse within each race–gender group. Since we theorized that physiological pleasure and psychological pleasure were associated (but not identical), we included one as a predictor of the other in the two respective models.

Results

Sexual, Relational, and Demographic Characteristics of College Student Respondents (See Table 1)

Overall, a sizable minority of respondents said that they experienced considerable or extreme satisfaction at first sexual intercourse, both physiologically (40.1%) and psychologically (45.1%). However, these figures hide significant gender (but not racial) disparities.

Physiological sexual satisfaction. Whereas only one fourth of young women reported considerable or extreme physiological sexual satisfaction (25.4% of Black women and 25.0% of White women), the same was true for almost two thirds of men (61.9% of Black men and 66.1% of White men). Furthermore, approximately one in three women reported no physiological sexual satisfaction (34.3% of Black women and 29.8% of White women) versus only 8.0% of Black men and 3.6% of White men.

Psychological sexual satisfaction. Although the gender difference in psychological sexual satisfaction was also statistically significant, the disparity was much less pronounced than with physiological sexual satisfaction. One third (33.6%) of Black women, 39.5% of White women, 57.3% of Black men, and 56.4% of White men reported considerable or extreme psychological satisfaction, whereas 29.5% of Black women, 22.9% of White women, 8.0% of Black men, and 6.4% of White men reported no psychological satisfaction at all.

Respondents' mean age at first sexual intercourse was 16.6 years, and the average age difference between respondents and their first sexual intercourse partners was 1.1 years. The majority of respondents were in a *committed love relationship* or *steady dating relationship* with their first sexual partner, although women were significantly more likely than men to report being in these types of relationships (73.9% of Black women and 84.0% of White women reported being in one of these categories vs. 34.5% of Black men and 67.5% of White men).

Guilt and anxiety at first sexual intercourse were common: one fifth (20.6%) of respondents reported extreme or considerable guilt, and 41.3% reported extreme or considerable anxiety. Women from both racial groups were significantly more likely to report the greatest guilt (31.9% of Black women, 24.8% of White women, 9.9% of Black men, and 11.4% of White men). Rates of extreme or considerable anxiety were more race and gender consistent (39.7% of Black women, 44.2% of White women, 32.7% of Black men, and 40.2% of White men). Eight percent (18.0%) of respondents reported being under the influence of alcohol or drugs at the time of first intercourse, and about one in four respondents (25.8%) reported not using any contraceptive method.

SEXUAL SATISFACTION AT HETEROSEXUAL DEBUT

Table 1. Percentage of Distribution of Descriptive Statistics (by Gender and Race) of College Students Aged 18 to 25

Variable	Total Sample (%)	Black Women (%; n = 272)	Non-Hispanic White Women (%; n = 967)	Black Men (%; n = 213)	Non-Hispanic White Men (%; n = 534)
Satisfaction					
Level of <i>physiological sexual satisfaction</i> with first intercourse					
Not at all	21.0	34.3 ^a	29.8 ^a	8.0 ^a	3.6 ^a
Slightly	16.9	17.7 ^a	22.2 ^a	12.2 ^a	8.8 ^a
Moderately	21.9	22.5 ^a	22.9 ^a	17.8 ^a	21.5 ^a
Considerably	22.8	16.2 ^a	18.5 ^a	19.2 ^a	35.4 ^a
Extremely	17.3	9.2 ^a	6.5 ^a	42.7 ^a	30.7 ^a
Level of <i>psychological sexual satisfaction</i> with first intercourse					
Not at all	17.8	29.5 ^a	22.9 ^a	8.0 ^a	6.4 ^a
Slightly	14.9	15.1 ^a	14.5 ^a	14.1 ^a	15.9 ^a
Moderately	22.2	21.8 ^a	23.1 ^a	20.7 ^a	21.2 ^a
Considerably	26.6	19.6 ^a	26.6 ^a	24.4 ^a	31.1 ^a
Extremely	18.5	14.0 ^a	12.9 ^a	32.9 ^a	25.3 ^a
Age characteristics					
Age at first sexual intercourse: <i>M (SD)</i>	16.6 (2.0)	16.0 (2.0) ^{a,b}	16.9 (1.8) ^b	14.9 (2.4) ^{a,b}	17.0 (1.8) ^b
Age difference between partners, in years: <i>M (SD)</i>	1.1 (2.3)	2.1 (3.3) ^{a,b}	1.5 (2.1) ^{a,b}	0.84 (2.0) ^{a,b}	0.17 (1.8) ^{a,b}
Type of relationship with first sexual intercourse partner					
Committed love relationship	34.9	35.8 ^{a,b}	44.5 ^{a,b}	10.8 ^{a,b}	26.0 ^{a,b}
Steady dating	38.2	38.1 ^{a,b}	39.5 ^{a,b}	23.7 ^{a,b}	41.5 ^{a,b}
Occasional dating	9.5	11.3 ^{a,b}	7.4 ^{a,b}	11.9 ^{a,b}	11.5 ^{a,b}
Friend	11.6	10.1 ^{a,b}	5.2 ^{a,b}	41.8 ^{a,b}	12.5 ^{a,b}
Casual acquaintance	5.8	4.7 ^{a,b}	3.4 ^{a,b}	11.9 ^{a,b}	8.5 ^{a,b}
Emotions and substance use					
Guilt					
Extreme or considerable	20.6	31.9 ^{a,b}	24.8 ^{a,b}	9.9 ^a	11.4 ^a
Moderate	13.2	15.4 ^{a,b}	14.2 ^{a,b}	8.9 ^a	11.8 ^a
Slight or not at all	66.3	52.7 ^{a,b}	61.0 ^{a,b}	81.2 ^a	76.8 ^a
Anxiety					
Extreme or considerable	41.3	39.7 ^a	44.2 ^{a,b}	32.7 ^{a,b}	40.2 ^b
Moderate	22.4	27.2 ^a	23.1 ^{a,b}	17.5 ^{a,b}	20.8 ^b
Slight or not at all	36.3	33.1 ^a	32.7 ^{a,b}	49.8 ^{a,b}	39.0 ^b
Under the influence of alcohol or drugs during first sexual intercourse	18.0	5.9 ^b	19.5 ^{a,b}	8.5 ^b	25.5 ^{a,b}
Consent at first intercourse					
Verbal	48.2	45.4 ^{a,b}	53.7 ^{a,b}	38.0 ^{a,b}	43.6 ^{a,b}
Nonverbal, implied consent	49.0	48.4 ^{a,b}	43.1 ^{a,b}	59.6 ^{a,b}	55.6 ^{a,b}
Non-consensual; against will	2.9	6.2 ^{a,b}	3.2 ^{a,b}	2.3 ^{a,b}	0.7 ^{a,b}
Contraceptive use at first sexual intercourse					
Used contraception	74.2	72.3 ^{a,b}	79.9 ^{a,b}	61.0 ^{a,b}	70.2 ^{a,b}
Did not use contraception	25.8	27.7 ^{a,b}	20.1 ^{a,b}	39.0 ^{a,b}	29.8 ^{a,b}
Religion					
Level of religiousness compared to others					
Less religious	38.2	17.1 ^{a,b}	40.3 ^{a,b}	30.2 ^{a,b}	48.0 ^{a,b}
About as religious	50.4	69.8 ^{a,b}	49.0 ^{a,b}	56.6 ^{a,b}	41.0 ^{a,b}
More religious	11.4	13.2 ^{a,b}	10.7 ^{a,b}	13.2 ^{a,b}	11.0 ^{a,b}

Note. N = 1,986.

^aSignificant ($p < .05$) gender differences within race (e.g., Black women vs. Black men).

^bSignificant ($p < .05$) racial differences within gender (e.g., Black women vs. non-Hispanic White women).

Relationships Between the Two Types of Satisfaction (Not Shown)

Among those respondents who reported considerable to extreme physiological satisfaction at first intercourse, 64.7% also reported considerable or extreme psychological satisfaction. Among those who reported psychological satisfaction, 75.8% reported physiological satisfaction. About one third (30.4%) of respondents reported both physiological and psychological satisfaction. The two satisfaction variables were significantly

associated ($p < .000$), but not collinear. The two-tailed Pearson's correlation coefficient for the two variables was .505 ($p < .01$), explaining only 25% of the variance.

Multivariate Analyses

Predictors of physiological sexual satisfaction (see Table 2). In multivariate analyses, several covariates helped predict physiological sexual satisfaction across multiple race-gender groups. As expected, psychological sexual satisfaction was strongly associated with

Table 2. *Multivariate Analyses (Logistic Regression): Predictors of Physiological Sexual Satisfaction at First Sexual Intercourse (by Gender and Race) of College Students Aged 18 to 25*

Predictor	Black Women (<i>n</i> = 272)		Non-Hispanic White Women (<i>n</i> = 967)		Black Men (<i>n</i> = 213)		Non-Hispanic White Men (<i>n</i> = 534)	
	Adjusted Estimates: Exp(β)	OR	Adjusted Estimates: Exp(β)	OR	Adjusted Estimates: Exp(β)	OR	Adjusted Estimates: Exp(β)	OR
Age characteristics								
Age at first sexual intercourse	1.22	.083*	1.15	.016**	1.22	.083*	1.01	.916
Age difference between partners, in years	0.96	.694	0.97	.491	0.96	.694	0.96	.538
Type of relationship with first sexual partner		.672		.080*		.007***		.812
Committed love relationship	3.6	.178	2.18	.205	3.46	.146	1.62	.293
Steady dating	0.84	.826	1.70	.908	0.71	.613	1.64	.233
Occasional dating	1.01	.991	0.27	.045**	4.35	.068*	1.50	.402
Friend	0.92	.852	1.33	.155	4.27	.023	1.64	.278
Casual acquaintance	1.00		1.00		1.00		1.00	
Emotions and substance use								
Guilt		.320		.019**		.105		.730
Extreme or considerable	1.00		1.00		1.00		1.00	
Moderate	0.45	.294	2.64	.023**	2.74	.281	0.92	.851
Slight or not at all	1.28	.643	2.84	.005***	4.52	.037**	1.18	.636
Anxiety		.174		.020**		.333		.229
Extreme or considerable	1.00		1.00		1.00		1.00	
Moderate	1.10	.886	1.54	.057*	0.48	.235	1.25	.427
Slight or not at all	2.22	.090*	1.95	.006***	0.51	.168	1.53	.087*
Under the influence of alcohol or drugs during first sexual intercourse	1.06	.947	0.94	.837	1.01	.933	0.60	.069*
Psychological satisfaction								
Level of psychological satisfaction at first intercourse								
Not at all, slightly, or moderately	1.00		1.00		1.00		1.00	
Considerably or extremely	20.95	.000***	9.09	.000***	9.84	.000***	5.23	.000***
Consent at first intercourse		.679		.262		.853		.624
Verbal	1.00		1.00		1.00		1.00	
Nonverbal, implied consent	1.47	.379	0.73	.104	1.04	.925	0.81	.331
Non-consensual; against will	~		0.67	.734	2.03	.573	~	
Contraceptive use at first sexual intercourse								
Used contraception	1.00		1.00		1.00		1.00	
Did not use contraception	1.97	.161	1.44	.124	2.99	.011**	1.26	.352
Religion								
Level of religiousness compared to others		.549		.122		.549		.116
Less religious	1.00		1.00		1.00		1.00	
About as religious	1.66	.374	0.96	.838	1.66	.374	1.64	.039**
More religious	1.00	.999	1.83	.065*	1.00	.999	1.37	.381
Nagelkerke R^2	0.50	.000***	0.38	.000***	0.42	.000***	0.26	.000***

Note. *N* = 1,986. OR = odds ratio.

p* < .10. *p* < .05. ****p* < .01.

physiological sexual satisfaction. Respondents experiencing considerable or extreme psychological satisfaction were much more likely to experience physiological satisfaction as well (Black women, odds ratio [OR] = 21.0, *p* = .000; White women, OR = 9.1, *p* = .000; Black men, OR = 9.8, *p* = .000; White men, OR = 5.2, *p* = .000).

A small number of other factors were significant predictors of physiological satisfaction in multivariate analyses. (Age difference between partners and type of consent were not associated with the outcome for any of the four sample groups.) Older age at first sexual intercourse was significantly associated with greater physiological satisfaction for Black women, $\exp(\beta)$ =

1.20, *p* = .083; White women, $\exp(\beta)$ = 1.20, *p* = .016; and Black men, $\exp(\beta)$ = 1.20, *p* = .083; but not for White men. Guilt at first intercourse was significantly associated with physiological satisfaction for White women and Black men only. Compared to those respondents with extreme or considerable guilt, respondents with slight or no guilt reported increased odds of physiological satisfaction (White women, OR = 2.8, *p* = .005; Black men, OR = 4.5, *p* = .037). Among Black men only, respondents who did not use condoms⁵ at first

⁵Among Black men, condoms were the only type of contraceptive method reported at first intercourse (not shown).

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intercourse experienced 3.0 times the odds of physiological sexual satisfaction compared to those who did use condoms ($p = .011$). Finally, among White women, compared to those who were “less religious,” respondents with greater levels of religiosity reported significantly lowered odds of physiological sexual satisfaction; among White men, the same was true of those who reported they were “about as religious.”

Predictors of psychological sexual satisfaction (see Table 3). As we found in the prior regression analysis, physiological sexual satisfaction was strongly associated with psychological sexual satisfaction. Those respondents experiencing considerable or extreme physiological satisfaction were much more likely to experience psychological satisfaction as well (Black women, OR = 21.4, $p = .000$; White women, OR = 9.1, $p = .000$;

Table 3. *Multivariate Analyses (Logistic Regression): Predictors of Psychological Sexual Satisfaction at First Sexual Intercourse (by Gender and Race) of College Students Aged 18 to 25*

Predictor	Black Women (n = 272)		Non-Hispanic White Women (n = 967)		Black Men (n = 213)		Non-Hispanic White Men (n = 534)	
	Adjusted Estimates: Exp(β)	OR						
Age characteristics								
Age at first sexual intercourse	0.80	.060*	1.09	.113	0.87	.176	0.86	.035*
Age difference between partners, in years	1.06	.556	1.01	.872	0.92	.553	0.93	.307
Type of relationship with first sexual partner		.014**		.000***		.015**		.091*
Committed love relationship	49.98	.004***	28.76	.000***	3.81	.120	3.60	.009***
Steady dating	20.57	.024**	9.51	.007***	5.27	.021**	1.94	.134
Occasional dating	11.04	.112	4.79	.090*	0.68	.620*	2.13	.412
Friend	11.73	.086*	3.00	.253	1.25	.726	1.85	.210
Casual acquaintance	1.00		1.00		1.00		1.00	
Emotions and substance use								
Guilt		.002***		.000***		.161		.000
Extreme or considerable	1.00		1.00		1.00		1.00	
Moderate	2.88	.111	1.98	.070*	0.81	.825	4.95	.002
Slight or not at all	6.07	.000***	7.39	.000***	2.47	.196	11.97	.000
Anxiety		.884		.002***		.297		.236
Extreme/considerable	1.00		1.00		1.00		1.00	
Moderate	0.81	.674	1.00	.991	0.58	.323	1.00	.997
Slight or not at all	0.82	.666	1.94	.002***	1.32	.530	1.48	.122
Under the influence of alcohol or drugs during first sexual intercourse	2.82	.238	0.73	.283	0.82	.778	1.03	.920
Physiological satisfaction								
Level of <i>psychological satisfaction</i> at first intercourse								
Not at all, slightly, or moderately	1.00		1.00		1.00		1.00	
Considerably or extremely	21.37	.000***	9.01	.000***	9.15	.000***	5.16	.000***
Consent at first intercourse								
Verbal	1.00	.606	1.00	.102	1.00	.726	1.00	.590
Nonverbal, implied consent	1.49	.317	0.70	.050*	1.14	.728	1.26	.304
Non-consensual; against will	~		2.02	.493	3.17	.445	~	
Contraceptive use at first sexual intercourse								
Used contraception	1.00		1.00		1.00		1.00	
Did not use contraception	0.83	.705	0.93	.751	0.93	.859	0.68	.122
Religion								
Level of religiousness compared to others		.997		.065*		.805		.916
Less religious	1.00		1.00		1.00		1.00	
About as religious	0.96	.942	0.95	.803	0.81	.628	1.09	.730
More religious	0.97	.966	0.47	.023**	0.68	.538	1.14	.737
Nagelkerke R^2	0.55	.000***	0.53	.000***	0.39	.000***	0.37	.000***

Note. $N = 1,986$. OR = odds ratio.
* $p < .10$. ** $p < .05$. *** $p < .01$.

Black men, $OR = 9.2$, $p = .000$; White men, $OR = 5.2$, $p = .000$).

As mentioned earlier, only a small number of other factors were significant predictors of psychological satisfaction in multivariate analyses. (Age difference between partners, consent, and contraception use were not associated with psychological satisfaction for any of the four sample groups.) Age at first sexual intercourse was a significant predictor of psychological sexual satisfaction for Black women (borderline significance) and White men, but in the opposite direction with physiological sexual satisfaction. Younger age was associated with greater odds of psychological satisfaction: Black women, $\exp(\beta) = 0.80$, $p = .060$; White men, $\exp(\beta) = 0.86$, $p = .035$.

Relationship status was strongly associated with psychological sexual satisfaction across all four groups, especially for women. Compared to those with whom first sexual intercourse was with a casual acquaintance, those in a committed loving relationship were significantly more likely to experience psychological satisfaction (Black women, $OR = 50.0$, $p = .000$; White women, $OR = 28.8$, $p = .000$; Black men, $OR = 3.8$, $p = .120$; White men, $OR = 3.6$, $p = .000$). “Steady dating” was also a significant predictor for all four groups, except for White men. Black men who were steadily dating their first intercourse partner were 5.3 times more likely report psychological satisfaction than those whose first partner was a casual acquaintance.

Guilt was significantly associated with psychological satisfaction for Black and White women, but not for men of either racial group. Compared to women with extreme or considerable guilt, women with slight or no guilt reported increased odds of psychological satisfaction (Black women, $OR = 6.1$, $p = .000$; White women, $OR = 7.4$, $p = .000$). Greater religiosity was associated with lower odds of psychological sexual satisfaction among White women only.

Discussion

Despite Carpenter’s (2002) musing that “gender may be losing salience as an aspect of shaping virginity loss and perhaps early sexual careers more generally” (p. 360), our findings indicate that young women still have significant ground to gain when it comes to the issue of sexual satisfaction at first heterosexual intercourse. Whereas only one fourth (25%) of young women in our study reported considerable or extreme physiological sexual satisfaction at first vaginal intercourse, the same was true for two thirds (65%) of men, and 38% of women versus 57% of men reported considerable or extreme psychological satisfaction. These numbers indicate little improvement for either gender from the time of Darling et al.’s (1992) analysis in which only 28% of young college women reported physiological satisfaction

and 28% reported psychological satisfaction, compared with 81% and 67% of men, respectively. Our figures for young men closely match those of the Canadian respondents in Tsui and Nicoladis’s (2004) recent analysis, but do not compare as favorably for young women. In Tsui and Nicoladis’s small study, 35% of women versus 62% of men reported physical satisfaction and 56% of men and 54% of women reported psychological satisfaction at first intercourse.

We focused on the presence of satisfaction, but its absence represents another example of gender inequality in affective experience of first vaginal intercourse. One third (31%) of women versus 5% of men in our study reported no physiological satisfaction, and 24% of women versus 7% of men reported no psychological satisfaction. To be sure, physiological differences between women and men (e.g., ease in reaching orgasm) can explain at least some of the gender disparity, especially when it comes to level of physiological satisfaction, and during vaginal intercourse in particular. Young women in Carpenter’s (2002, 2005) study, who had lost their virginity through cunnilingus with another woman rather than vaginal intercourse with a man, were much more likely to describe their encounters as physically pleasurable (see Carpenter, 2002). However, physiology cannot explain all of the disparity in psychological satisfaction. Sexuality researchers need to better investigate and attend to the inequalities that lead to such unsatisfying first sexual intercourse experiences for young women, the long-term effects of these inequalities, and the degree to which a “catch-up” effect exists, if at all. However, men’s experiences with satisfaction at first intercourse should not be ignored. We agree with Guggino and Ponzetti (1997) that young women, and not young men, have remained the major focus of research on affective experience of (hetero)sexual debut. We find it interesting, for example, that a greater proportion of men in this and other studies report physiological versus psychological satisfaction—the inverse is true for young women—and yet few researchers have commented on or further explored this phenomenon.

The study also helped identify some of the factors that most strongly predicted satisfaction. As expected, psychological satisfaction was strongly associated with physiological satisfaction, and vice versa (most powerfully for Black women and least powerfully for White men). Those people who felt considerably or extremely satisfied in one way were much more likely to feel considerably or extremely satisfied in the other, although it is impossible to tell whether one type of satisfaction was likely to precede the other or whether they interacted in a more synergistic fashion. Including the other type of satisfaction in each of the models did not greatly alter individual effects estimates for other covariates, but it did significantly improve the goodness of fit. However, the dual satisfaction variables were neither identical nor collinear, and a small but significant

proportion of respondents who experienced one type of satisfaction did not experience the other. The various dimensions of what constitutes “satisfaction” remain a fascinating and important area of study for the sexuality field. The phenomenology of why and how types of satisfaction overlap for some and diverge for others deserves continued scholarly attention.

Despite a strong goodness of fit for the overall models, surprisingly few other factors were individually significant, including a number of the factors hypothesized to influence satisfaction (e.g., age, age difference between partners, type of consent at first intercourse, use of contraception, and religiosity). Two other factors, guilt and relationship status, stand out as strong predictors of both types of satisfaction. Guilt, however, was statistically significant only for women, especially regarding psychological satisfaction (in the physiological satisfaction analysis, guilt was strongly significant for White women, and the OR for one category was borderline significant for Black men). Our findings provide even further evidence that young women strongly internalize the cultural stigma on their sexual behavior.⁶ Not surprisingly, such internalization of guilt can seriously undermine some young women’s ability to achieve satisfaction from their first intercourse experience, as well as from subsequent sexual experiences (Moore & Davidson, 1997).

Relationship status remained a strongly significant predictor of psychological satisfaction for all four racial–gender groups, especially for women. Compared to those whose first intercourse partner was a casual acquaintance, women in committed, loving relationships were upwards of 29 times (White women) to 50 times (Black women) as likely to report psychological satisfaction.⁷ Steady dating was also a significant predictor for all four groups, except for White men. As such, our findings are in keeping with the normative gender scripts and with previous scholarship linking romance to pleasure more directly for women than men (Guggino & Ponzetti, 1997). Being “in love” can also help young women justify their decision to have intercourse for the first time, since women have less cultural access to casual sex—a phenomenon that tends to be pathologized in young women but not young men.⁸ Moreover, young women

who wait for their relationship to progress into a stable partnership may feel more ready for and in control of their first intercourse experience (Skinner et al., 2008), which can also affect satisfaction. However, it is also important to note that relationship status was a powerful predictor of psychological satisfaction among *men* as well. Although the ORs were far less dramatic than women’s, both Black and White men in steady dating or committed love relationships were two to five times as likely to report psychological satisfaction than men whose first partner was a casual acquaintance. Previous studies have argued that for men at first intercourse (Guggino & Ponzetti, 1997) and, more generally speaking (Rubin, Peplau, & Hill, 1978), feelings of romance and love, are often separated from those of pleasure. However, in our study, being in relationships strongly and significantly enhanced both women’s *and* men’s sexual psychological satisfaction at first intercourse.

A final contribution of this study is its sample size and diversity that enabled explorations of Black and White racial–gender groups separately. Blacks and other racial and ethnic minority groups (whom, regrettably, we were not able to examine in this analysis) have been entirely left out of prior studies on affect and first intercourse, or else included only as the smallest of subgroups. Moreover, the literature has paid far more attention to *behavioral* differences between racial and ethnic groups (e.g., age at first intercourse or number of partners) than to the subjective aspects of those differences or the contexts in which they occur. Our findings indicate that racial differences in physiological and psychological satisfaction at first intercourse are hardly pronounced—Blacks and Whites are far more similar than different. That said, we learned from interaction tests that the differences were significant enough to warrant separate analyses by race. Black university students have been found to be more liberal in their sexual attitudes than Whites (Davidson, Moore, Earle, & Davis, 2008)—a discrepancy that may help explain some of these differences. Although we do not wish to overstate racial differences, we also need to remain attuned to the ways in which factors affect racial groups in subtly divergent ways. As O’Sullivan et al. (2007) argued, “the extent to which [sexual] relationship development varies on the basis of race and ethnicity is still unclear” (p. 101). Future research also needs to hone our understandings of *intersections* of gender, race, and—ideally—social class in shaping sexual experiences and emotions.

Limitations

Our assessment of satisfaction at first intercourse was based on data from two close-ended, categorical questions. Other than the covariates included in our analyses (e.g., age, age difference between partners, guilt, anxiety, use of alcohol, etc.), we know nothing about the

⁶When it comes to guilt and affective sexual experience, young women in our study may be affected by their gender, as well as their cultural location (Shalet, 2007). In a comparison between American and Swedish women, American women expressed significantly more negative affective reactions to initial coitus, which the author blamed on the United State’s more sexually restrictive culture (Schwartz, 1993).

⁷It could be that among those women whose first partner was a casual acquaintance, a smaller group may have experienced assault or non-consensual sex. However, we controlled for non-consensual sex in the model.

⁸Along similar lines, Quakenbush, Strassberg, and Turner (1995) found that erotica was most acceptable to women when it included romance scripts, thereby helping (perhaps) to justify their own consumption of erotic material.

contexts in which first intercourse occurred—contexts detailed in much richer detail in previous in-depth qualitative studies of sexual development and debut (Holland et al., 1998; Thompson, 1995; Tolman, 1994). For example, we could not explore the meanings that individual respondents associated with heterosexual debut (e.g., virginity loss as a gift, stigma, or learning experience), which are meanings that can influence sexual satisfaction (Carpenter, 2002).⁹ Nor could we assess the sex positivity or negativity of respondents' family contexts or developmental contexts, which have also been shown to influence affective experiences of virginity loss (Thompson, 1990). Our study failed to include a question about experience of orgasm at first intercourse, which could have been an important mediating influence on both physiological and psychological satisfaction (Guggino & Ponzetti, 1997). Furthermore, the study precluded an examination of social class, which is likely to influence affective first intercourse experiences, given its influence on timing of intercourse and other sexual behaviors. Our sample of all university students was likely to have less social class variation than a sample drawn from 18- to 24-year-olds in the general population; nonetheless, we would love to see work that further examines how social class operates in the bedroom and shapes sexual meanings and affects (Higgins & Browne, 2008).

Our sample represents college students from four distinct regions, but analyses did not include school location as a possible predictor, although region has been shown to influence sexual attitudes and behaviors (Laumann et al., 1994). However, in one study using these same data, factors such as family background and race were more influential than region or religion in shaping sexual attitudes and behavior (Davidson et al., 2008). Thus, in the spirit of more parsimonious models, we deliberately excluded region from the analyses.

Given our use of a non-random sample of non-Hispanic White and Black students at four universities, results cannot be extrapolated to all U.S. college students, let alone young adults in the United States more generally. Although we have a larger sample size than previous studies, our data nonetheless derive entirely from a college population—a population relied on (too) heavily in the study of affective sexual experiences among young people (Cohen & Shotland, 1996; Darling et al., 1992; Guggino & Ponzetti, 1997; Sprecher et al., 1995; Tsui & Nicoladis, 2004). We encourage future studies to explore whether similar findings would emerge from more representative samples.

Conclusion

This study indicates that physiological and psychological satisfaction, although closely related, are separate and important domains of the first vaginal intercourse experience. Two factors strongly associated with both physiological and psychological satisfaction at first sexual intercourse, especially for women, are being in closer, more loving relationships and experiencing little or no sexual guilt. Finally, despite few racial differences, gender disparities in sexual satisfaction were large and significant. Results indicate a need to continue working to overcome gender inequality in the bedroom and recognize the importance of trusting and loving relationships in facilitating satisfaction at first intercourse.¹⁰

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⁹For example, as Carpenter (2002) found in her study, “a person who felt he or she learned something positive from virginity loss could find satisfaction independent of his or her partner's conduct” (p. 359).

¹⁰We wish to note that, although relationship status may significantly influence affective experience of first intercourse, it may not have long-term influences on sexual health. A recent analysis found that relationship status at first intercourse was not consistently associated with later psychological or physical health outcomes such as sexual dysfunction, sexual guilt, sexually transmitted diseases, overall health, and life satisfaction (Else-Quest, Hyde, & Delamater, 2005).

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