

Affect and Sexual Behavior in the Transition to University

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Abstract This research applied a lifespan developmental framework to the study of sexual behavior among late adolescents by examining monthly covariations of penetrative and oral sex with positive and negative affect across the first year of university. Participants were 177 Canadian students who completed baseline questionnaires, followed by six monthly, web-based questionnaires assessing sexual behaviors and affect. Multilevel analyses revealed an average positive relation between oral sex and positive affect. Of six variables, five predicted individual differences in covariation between sex and affect: psychosocial maturity (immature and semi-mature status), attitudes toward sex, prior sexual experience, and living situation. During months when participants reported sexual behavior, psychosocially mature students reported more positive affect than did less mature students; students with more permissive attitudes reported more positive affect than did students with less permissive attitudes; students with no penetrative sexual experience reported more positive affect than students who had penetrative sexual experience; and living away from parents was associated with less negative affect. Implications for further study of sexual behavior from a developmental perspective are discussed.

Keywords Affect · Adolescents · Sexual behavior · Psychosocial maturity · Multilevel modeling

Introduction

The study of sexuality in adolescence has long been dominated by a risk orientation, whereby experimentation with sexual behavior has been depicted as dangerous (Savin-Williams & Diamond, 2004), immoral (Ehrhardt, 1996), and on par with problem drinking and deviant behavior (Costa, Jessor, Donovan, & Fortenberry, 1995). In North America, adolescents are pressured by cultural authority figures to remain abstinent, despite social and biological cues to explore their sexuality. By the time young people reach their mid-20s, most have initiated sexual activities with partners, making sexual behavior normative (Lefkowitz & Gillen, 2006; Maticka-Tyndale, Barrett, & McKay, 2000). Despite general agreement among American adults that post-adolescent premarital sex is acceptable (Arnett, 2004), the risk orientation has also influenced research on sexual behavior during the transition to adulthood (Lefkowitz & Gillen, 2006). To the extent that the sexuality-as-risk approach predominates, issues related to positive sexual experiences and learning of sexual competence will remain unaddressed (Ehrhardt, 1996).

In an effort to balance the risk orientation, we take a lifespan developmental approach to the study of sexual behavior in the transition to adulthood (Baltes, Lindenberger, & Staudinger, 1998; Lerner, 2004), emphasizing sexual development as taking place throughout the life course, and embedded within a network of contexts (e.g., family, peers, school, culture/society) that simultaneously influence one another and the individual (Bronfenbrenner, 1977; Lerner, 1998). A primary concern of the lifespan approach is to evaluate empirically behavior in terms of *developmental norms* (i.e., average or typical patterns of behavior), *inter-individual differences* in developmental progress (i.e., predictors of behavioral patterns), and *intraindividual change*

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over time (i.e., covariation between behavioral patterns; Baltes et al., 1998). The lifespan approach is consistent with a *positive youth development* perspective, in which youth are considered to be active contributors to their own development and risky behaviors (e.g., substance use) are viewed as exceptional instances, rather than the norm (Lerner, Almerigi, Theokas, & Lerner, 2005). Youth are seen as possessing or having access to resources (e.g., resilience, networks of social support) capable of promoting positive outcomes. If we approach sexual development from a positive, lifespan developmental framework, it becomes important to investigate the associations between sexual behavior and psychological, emotional, and/or social well-being. In the current study, we begin to do so by exploring month-to-month covariations of sexual behavior with positive and negative affect in individuals making the transition to adulthood. Positive and negative affect were selected for study because they are distinct but complementary indicators of emotional states and are sensitive to the variety of events and experiences that individuals regularly encounter as they go about their lives (Almeida, Wethington, & Chandler, 1999; Galambos, Dalton, & Maggs, in press).

Associations Between Sexual Behavior and Affect

A substantial literature exists on *daily* variation in affect prior to and following engagement in sexual activities. Research has shown, for example, significant relations between daily positive mood and sexual activity in adolescents (Skiba, Fortenberry, & Blythe, 1997), increases in participants' likelihood of having sex on a given day based on positive mood (Fortenberry, Temkit, Tu, Katz, & Orr, 2003), and changes in levels of positive and negative affect 8–10 h prior to engaging in sexual intercourse that returned to baseline levels approximately 8 h following sex (Shrier & de Moor, 2006). Burleson et al. (2007) also documented day-to-day relations between sexual experiences and mood in middle-aged women.

Although daily diary studies demonstrate relations between sexual activity and mood within days or from 1 day to the next, the covariation of sexual behavior and affect across longer intervals has not been assessed. From a lifespan developmental perspective, it is important to track the relations between affective experiences and engagement in sexual behavior over longer spans of time (e.g., several months) to gain knowledge about how they develop together. Some patterns of association (e.g., increases in sexual activity covarying with increases in positive affect) might reflect positive sexual development whereas others (e.g., increases in sexual activity covarying with decreases in positive affect) might reflect suboptimal sexual development. The lifespan developmental perspective leads to a consideration of interindividual differences that could predict

whether individuals manifest positive or suboptimal patterns of sexual development, as indicated by sex–affect covariations across many months during the transition to adulthood.

Predictors of the Association Between Sexual Behavior and Affect

Several studies have shown that men and women approach sexuality in different ways. A meta-analysis of gender differences in sexuality concluded that, in general, men's attitudes toward casual and premarital sex were more permissive than women's and men tended to engage in sexual intercourse earlier, more frequently, and with more partners (Oliver & Hyde, 1993). Thus, the relation between sex and positive affect might be stronger in young men than young women.

Early initiation of sexual intercourse is often associated with a range of health risk behaviors (e.g., Brook et al., 2004; Capaldi, Crosby, & Stoolmiller, 1996; Cornelius, Clark, Reynolds, Kirisci, & Tarter, 2007; Tubman, Windle, & Windle, 1996), yet one longitudinal study found that accounting for psychosocial adjustment prior to sexual initiation eliminated the effect of early initiation on subsequent poor adjustment (Bingham & Crockett, 1996). Among older adolescents, prior experience with sexual intercourse may directly imply preparedness to engage in sexual behavior. Alternatively, not having prior sexual experience may mean that the individual has waited for the right time to initiate sexual activities, and may be more likely to experience initial sexual activities more positively than their sexually experienced counterparts.

Moving away from parents is a major task of the transition to adulthood. Although some studies have indicated an association of leaving home with less depression and better relations with parents during the transition to adulthood (Aseltine & Gore, 1993; Smetana, Metzger, & Campione-Barr, 2004), others have found that living away from parents was related to a significantly higher risk of binge eating (Barker & Galambos, 2007), more depression (Galambos & Krahn, 2008; Seiffge-Krenke, 2006), and higher alcohol use (Kuo et al., 2002). In any case, living away from parents creates opportunities to engage in sexual activities due to freedom from parental detection.

Attitudes toward sexual behavior have become more permissive (accepting of sexual behavior outside the marriage context) over time and across age groups (Bibby & Posterski, 1992; Herlitz & Ramstedt, 2005; Wells & Twenge, 2005), though in Canada rates of permissive attitudes have remained roughly the same since the 1980s (Bibby, 2001). In one study, adolescents who had not initiated sexual intercourse were more likely to delay initiating intercourse if they or their friends had less permissive attitudes towards sex (Carvajal et al., 1999). Intuitively, more permissive attitudes toward sex are likely to be associated with more positive

appraisals of sexual experiences. Conversely, individuals with less permissive attitudes who engage in sexual activities may experience less positive and more negative affect.

Galambos, Barker, and Tilton-Weaver (2003) proposed that psychosocial maturity in adolescence would set the stage for a successful transition to adulthood. Insofar as sexual experiences that are perceived positively are indicative of a successful transition, then psychosocial maturity ought to predict enhanced sex–affect relations. Some adolescents believe that engaging in sex makes them more mature and adult-like (Arbeau, Galambos, & Jansson, 2007; Gowen, Feldman, Diaz, & Yisrael, 2004; Ott, Pfeiffer, & Fortenberry, 2006), and preadolescent girls who “act older” engaged in sexual intercourse earlier than did younger-acting girls (Udry, Kovenock, Morris, & van den Berg, 1995). These studies suggest that simply engaging in sex is thought to be associated with psychosocial maturity. A perceived connection between sexual experience and maturity, however, may be more an illusion than reality, as “adultlike” behavior (e.g., sex at a young age, using alcohol) is more characteristic of adolescents who are *pseudomature* rather than genuinely mature (Galambos & Tilton-Weaver, 2000). Genuine psychosocial maturity may not be linked simply to engaging in sex but engaging in sex that is positively experienced.

Measurement of Sexual Behavior

Many studies of sexual behavior, especially among adolescents, ask participants only whether they have engaged in sexual intercourse, or merely offer the vaguely-defined question “Have you ever had sex?” Research has highlighted the importance of explicitly differentiating between oral sex and intercourse (Brady & Halpern-Felsher, 2007; Cornell & Halpern-Felsher, 2006; Halpern-Felsher, Cornell, Kropp, & Tschann, 2005). It has been argued that adolescents engage in oral sex for different reasons than vaginal intercourse, and that a greater proportion of adolescents experiment with oral sex than vaginal intercourse. Indeed, 58% of Canadian adolescents aged 14–17 agreed that “oral sex is a good alternative to intercourse for someone who wants to remain a virgin” (Canadian Association for Adolescent Health, 2006). Adolescents perceive and experience fewer negative social and emotional consequences when they engage in oral sex but not vaginal intercourse (Brady & Halpern-Felsher, 2007; Halpern-Felsher et al., 2005). These studies suggest that adolescents making the transition to adulthood may be prepared to engage in different sexual behaviors at different times and for different reasons. The range of distinguishable sexual behaviors is not limited to oral and vaginal intercourse. However, the majority of individuals in the transition to university will have already initiated less intimate behaviors such as touching and kissing (Boyce, Doherty, Fortin, & MacKinnon, 2003). As a result, the current study focused on

the two sexual behaviors that were most likely to be at least somewhat novel for most participants: oral sex and penetrative sex.

The Current Study of First-Year University Students

This study tracked the sexual and affective experiences of students from month-to-month across their first year of university. The transition to university can involve multiple changes, such as moving away from home and gaining freedom from parental supervision (Lefkowitz, 2005), which may lead to the emergence of new behaviors (Graber & Brooks-Gunn, 1996). As a result, many students take advantage of opportunities to explore their sexuality. For example, in one study, rates of active sexual engagement increased from 34% in first-year students to 63% in third- and fourth-year students (Siegel, Klein, & Roghmann, 1999). Thus, the first year of university is an opportune time to observe associations between sexual behavior and affect.

Research questions were: Is sexual behavior associated with positive and negative affect month-to-month across the first year of university? Are person-level characteristics (gender, prior sexual experience, living situation, attitudes toward sex, psychosocial maturity) a source of individual differences in the month-to-month associations between sexual behavior and affect? We predicted that men, those living away from parents, those with permissive sexual attitudes, and psychosocially mature students would report greater positive affect in relation to engagement in sexual behavior. A directional prediction was not made for prior sexual experience.

Method

Participants

Participants were 177 students (109 women) from *Making the Transition II*, a study tracking health, risk, and academic behaviors across the first year of university. All were full-time students attending a large western Canadian university who were under age 20 without any previous post-secondary experience. Mean age at study onset was 18.4 years ($SD = .44$, range = 17.5–19.8). There was some ethnic diversity: 74% were white, 13% Asian, 5% mixed ethnicity, 3% Indo-Canadian, 2% black, and 3% another visible minority (e.g., Aboriginal, Arabic). Fifty-two percent lived with their parents; the remainder lived on campus (28%), in an apartment on their own or with roommates (14%), or with relatives (6%). Two participants were married and three were cohabitating. Most lived in two-parent homes while growing up (86%), and 74% of their mothers and 75% of their fathers had completed college or university.

Procedure

Participants were recruited from compulsory first-year English classes at the university to access the wide variety of students required to take these classes. Students were also recruited through Engineering classes, in which faculty the English requirement was managed differently. Recruitment took place during the first week of classes in September 2005 through the second week of October 2005. Students were invited to attend an orientation session during which details of the study were described, consent forms were distributed, and a baseline questionnaire was administered. Participants were asked to complete six monthly, web-based questionnaires. They were assigned an ID number and password to access the questionnaires. Questionnaire data were stored on a secure server. For each completed questionnaire, participants received \$10. An additional \$5 was offered to participants for completion of the final questionnaire. Questionnaires were made available for approximately 7 days at the beginning of each month, from November 2005 through April 2006. Attrition among the 198 original participants was low. Eighty-eight percent completed 4–6 questionnaires, and only 11 participants failed to complete any questionnaires. Twenty-one participants were excluded from the current study because they were missing one or more of the relevant measures at baseline or they completed no monthly questionnaires.

Measures

Between-persons predictors (gender, prior sex, living situation, attitudes toward sexual behavior, and psychosocial maturity) were drawn from the baseline questionnaire. Monthly penetrative and oral sex and positive and negative affect were assessed on the web-based questionnaires.

Gender, Prior Sex, and Living Situation

Gender was coded as 0 (*women*) or 1 (*men*). Whether participants ever had penetrative sex (“sex in which the penis penetrates the vagina or anus”) by baseline was coded as 0 (*no*) or 1 (*yes*). Twenty-seven percent reported having had penetrative sex. Living situation was coded as 0 (*lives with parents*) or 1 (*lives away from parents*).

Attitudes Toward Sexual Behavior

Items assessing attitudes toward sexual behavior were selected and modified from the Canadian Youth, Sexual Health, and HIV/AIDS study (Boyce et al., 2003), and the University of Alberta Student Sexual Behavior Survey (Doherty, 1995). The five items (“sex before marriage is OK if you’re in love”; “it’s alright to have casual sex”; “I feel

guilty when I think about sex” [reverse-scored], “unmarried people should not have sex” [reverse-scored], and “it’s alright to masturbate”) were rated on a scale ranging from 0 (*strongly disagree*) to 3 (*strongly agree*). A higher mean score indicates more permissive attitudes towards sexual activity ($M = 1.88$, $SD = 0.80$, $\alpha = .84$).

Psychosocial Maturity

A measure of psychosocial maturity was derived from five scales: subjective age, alcohol use, self-reliance, identity, and work orientation. To assess *subjective age* (Galambos et al., 2003; Montepare, Rierdan, Koff, & Stubbs, 1989), participants rated seven items (e.g., “Compared to most people my age, most of the time I feel...”; “My interests and activities are most like people who are...”) on a scale ranging from 1 (*A lot younger than my age*) to 7 (*A lot older than my age*). Higher mean scores indicate an older subjective age ($M = 4.59$, $SD = 0.78$, $\alpha = .80$).

Four items from the Monitoring the Future survey (e.g., Johnston, O’Malley, Bachman, & Schulenberg, 2006) assessed *alcohol use*: “On how many occasions have you had alcoholic beverages to drink—more than just a few sips...” for the past 12 months and for the past 30 days, and “On how many occasions (if any) have you been drunk or very high from drinking alcoholic beverages...” for the past 12 months and for the past 30 days? Response options for number of occasions ranged from 0 (0) to 6 (40 + *occasions*). Higher mean scores indicate greater alcohol use and potential for alcohol abuse ($M = 1.71$, $SD = 1.44$, $\alpha = .90$).

The 12-item autonomy, identity, and industry subscales from the Erikson Psychosocial Inventory Scales (Rosenthal, Gurney, & Moore, 1981) assessed *self-reliance* (“I like to make my own choices”), *identity* (“I know what kind of person I am”), and *work orientation* (“I’m a hard worker”), respectively. Participants rated how well each item applied to them, on a scale ranging from 1 (*Hardly ever true*) to 5 (*Almost always true*). Higher mean scores indicate more self-reliance ($M = 3.84$, $SD = 0.56$, $\alpha = .80$), higher identity achievement ($M = 3.72$, $SD = 0.67$, $\alpha = .85$), or a stronger work orientation ($M = 3.98$, $SD = 0.52$, $\alpha = .82$).

Following earlier research (Galambos & Tilton-Weaver, 2000), the subjective age, alcohol use, self-reliance, identity, and work orientation measures were submitted to a cluster analysis using Ward’s (1963) method, with squared Euclidean distances as the measure of similarity. This analysis suggested that a three-cluster solution was most meaningful. Second, a cluster analysis using iterative partitioning was conducted, using seed values obtained from Ward’s method, to divide the data into three clusters (Aldenderfer & Blashfield, 1984). Figure 1 shows the results of the solution. The mature and immature clusters were very similar to those identified in adolescents (Galambos & Tilton-Weaver,

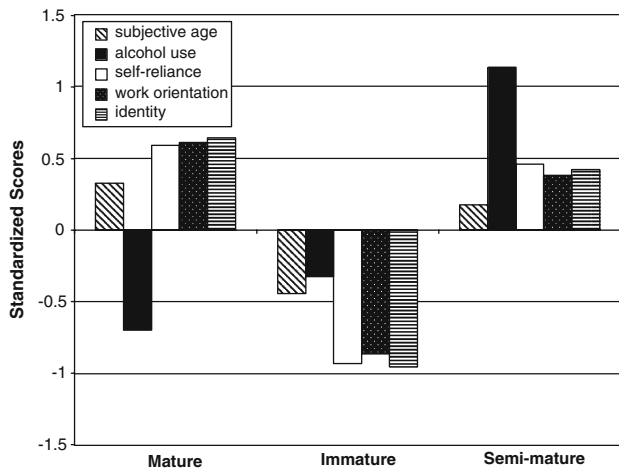


Fig. 1 Maturity status clusters

2000). Students classified as mature ($n = 61$; 35 women) had an above average subjective age, low alcohol use, and high scores on self-reliance, identity, and work orientation. Students classified as immature ($n = 59$; 34 women) had a younger than average subjective age, relatively low alcohol use, and low scores on self-reliance, identity, and work orientation. The third cluster, which we referred to as *semi-mature* ($n = 57$; 40 women), had a slightly older subjective age, high alcohol use, and better than average scores for self-reliance, identity, and work orientation.

Penetrative and Oral Sex

Participants were asked “In the past month, have you had penetrative sex (sex in which the penis penetrates the vagina or anus)?” Responses were coded as 0 (*no*) and 1 (*yes*). Thirty-one percent engaged in penetrative sex in at least 1 month during the first year (range across 6 months = 19–23%). They were also asked “In the past month, have you performed any oral sexual activity on a partner?” and “In the past month, have you received any oral sexual contact from a partner?” Responses were coded as 0 (*no* to both questions) and 1 (*yes* to one or both questions). Thirty-eight percent engaged in oral sex in at least 1 month during the first year (range across 6 months = 20–27%).

Positive and Negative Affect

Each month, items from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) assessed positive (10 items, e.g., interested, proud) and negative affect (10 items, e.g., distressed, hostile) across the previous 2-week period. Participants were asked, “Over the last 14 days, on how many days did you feel...” The number of days for the positive affect items was summed, as was the number of days for the negative affect items. Scores could

range from 0 to 140. Higher scores indicate that across 2 weeks participants experienced more positive ($M = 66.57$, $SD = 27.98$, range in α over 6 months = .92–.95) and more negative affect ($M = 31.26$, $SD = 18.98$, range in α over 6 months = .88–.93). A 14-day period was used because recall of emotions over 14 days is accurate within 1 or 2 days (Brown, Williams, Barker, & Galambos, 2007).

Results

Participants’ mean attitudes toward sexual behavior fell above the midpoint of the measure, indicating that they had more rather than less permissive attitudes toward sex. Their mean subjective ages were slightly higher than the midpoint, indicating that they felt slightly older than their chronological ages. Participants’ mean alcohol use indicated that, on average, they were occasional users of alcohol. Participants’ scores on measures of self-reliance, identity, and work orientation were relatively high.

Table 1 presents correlations among the predictors, sexual behaviors, and affect. Men reported significantly less engagement in sexual behavior, on average, compared to women, and lower levels of positive affect. Prior sexual experience was related to living away from home, permissive sexual attitudes, mature or semi-mature status, penetrative and oral sex, and higher positive affect. Immature status was associated with lower positive affect and higher negative affect, whereas semi-mature status was associated with higher positive affect and penetrative and oral sex. Engagement in penetrative and oral sex were highly correlated. Positive and negative affect ratings were weakly inversely related.

Multilevel models were constructed to examine change or covariation over time in the association between sexual behavior and positive affect, and the influence of between-persons predictors on month-to-month covariation. Hierarchical linear modeling (HLM) software was used (Raudenbush & Bryk, 2002).

Multilevel models in HLM are presented conceptually as separate regression equations for each level of analysis. The first level of analysis (Level 1; within-person) models data collected over repeated occasions of measurement (monthly questionnaires) for each person. The second level of analysis (Level 2) includes between-persons predictors, such as gender. The first level of analysis in the present study is expressed as follows:

$$\text{Level 1: Positive affect}_{it} = \pi_{0i} + \pi_{1i}(\text{penetrative sex}) + e_{it}. \quad (1)$$

Equation 1 expresses a given participant’s score on the outcome variable, Positive affect, for each month in terms of that

Table 1 Intercorrelations among study variables

Variable	1	2	3	4	5	6	7	8	9
1. Gender ^a									
2. Prior sex ^b	-.11								
3. Living situation ^c	.01	.29*							
4. Attitudes toward sex	.11	.36*	.10						
5. Mature versus immature ^d	.06	-.18*	-.13	-.07					
6. Mature versus semi-mature ^e	-.12	.35*	.14	.32*	-.49*				
7. Penetrative sex ^f	-.24*	.69*	.22*	.30*	-.18*	.26*			
8. Oral sex ^f	-.22*	.56*	.30*	.32*	-.12	.24*	.84*		
9. Positive affect ^f	-.16*	.16*	.10	.11	-.45*	.29*	.09	.15	
10. Negative affect ^f	-.03	-.05	.12	.11	.31*	-.05	-.03	-.02	-.18*

Note: $N = 177$. ^a Men = 1. ^b Had penetrative sex by baseline = 1. ^c Lives away from parents = 1. ^d Immature = 1. ^e Semi-mature = 1. ^f 6-month average. * $p \leq .05$

participant's positive affect score averaged across months, π_{0i} , plus the value of the coefficient for whether they engaged in penetrative sex, π_{1i} , plus a random error component, e_{ti} . Note that because the coefficient for engagement in penetrative sex becomes zero during months in which participants do not have sex, the intercept, π_{0i} , is mathematically equivalent to participants' scores for months in which they did not have sex.

Illustrative Level-2 equations are presented next, modeling a single between-persons predictor on the intercept and slope. Equation 2 models the average score for a given participant—the intercept in Eq. 1—as a function of the grand mean of all participants' positive affect scores, β_{00} , plus the influence of gender, β_{01} , plus a random error component, r_{0i} . Equation 3 models the average score for a given participant as a function of the grand mean of participants' positive affect scores for months in which they engaged in penetrative sex, β_{10} , plus the influence of gender, β_{11} , plus a random error component, r_{1i} :

$$\text{Level 2: } \pi_{0i} = \beta_{00} + \beta_{01}(\text{Gender}) + r_{0i} \quad (2)$$

$$\pi_{1i} = \beta_{10} + \beta_{11}(\text{Gender}) + r_{1i}. \quad (3)$$

Unconditional models, containing no covariates at Level 1 and no predictors at Level 2, were first calculated for positive and negative affect, respectively. One function of the unconditional models was to determine whether enough variation was present at each level of analysis to justify modeling random effects at separate between- and within-person levels. The unconditional model for positive affect determined that 28% of the variation in positive affect scores was due to between-persons factors (72% within-persons). The average positive affect rating in a 2-week period was 66.11 ($SE = 2.10$). The reliability of this estimate was high, at .92. The unconditional model for negative affect determined that 37% of the variation in days of negative affect was due to between-persons factors, while 63% was

due to within-person factors. The average negative affect rating in a 2-week period was 31.06 ($SE = 1.46$). The reliability of this estimate was high, at .89. Results derived from the *final models*, containing sexual behavior covariates at Level 1 and between-persons predictors at Level 2, are presented next.

Positive Affect

Penetrative Sex

Table 2 shows the results of the HLM analysis that tested for effects of between-persons predictors (gender, prior sexual experience, living situation, attitudes toward sex, and maturity status) on the within-time association between positive affect and penetrative sex. Two significant between-persons effects on participants' average levels of positive affect were observed (i.e., effects on the intercept). Men's positive affect scores were 10.69 points higher than women's. Immature participants' positive affect scores were 17.99 points lower than mature participants' scores. The mature-immature difference in intercept (which is mathematically equivalent to the difference in months when they were not having penetrative sex) is shown in Fig. 2a.

There were also three between-persons effects on the within-time association between positive affect and engagement in penetrative sex (i.e., effects on the slope). For every unit increase in permissiveness of attitudes toward sexual behavior, participants rated their positive affect 12.38 points higher during months in which they engaged in penetrative sex. For example, participants who reported that they *agreed* with statements indicating that sexual behavior was acceptable also rated their positive affect 12.38 points higher during months when they reported penetrative sexual experiences than participants who reported that they *disagreed* with these statements and engaged in penetrative sex anyway.

Table 2 Effects of between-person predictors on the within-time association of positive affect with engagement in penetrative and oral sex

Predictor	Penetrative sex		Oral sex	
	Coefficient	SE	Coefficient	SE
Average level of positive affect (intercept)	63.99	5.01	62.86	4.74
Gender ^a	10.69*	4.30	11.56*	4.12
Prior sex ^b	3.00	5.64	4.79	5.29
Living situation ^c	−0.20	4.30	−1.82	4.06
Attitudes toward sex	−1.70	2.82	−1.87	2.78
Mature versus immature ^d	−17.99*	5.15	−17.85*	5.00
Mature versus semi-mature ^e	9.05	5.86	10.24	5.61
Level of positive affect during months with sex (slope)	8.16	6.50	14.46*	7.29
Gender ^a	−3.69	4.92	−4.29	4.46
Prior sex ^b	−5.49	5.33	−9.42*	4.28
Living situation ^c	4.74	4.76	8.62	4.56
Attitudes toward sex	12.38*	4.58	5.45	4.58
Mature versus immature ^d	−16.28*	6.54	−14.89*	6.39
Mature versus semi-mature ^e	−13.31*	6.48	−17.44*	6.24

Note: $N = 177$. ^a Men = 1.

^b Had penetrative sex by baseline = 1. ^c Lives away from parents = 1. ^d Immature = 1.

^e Semi-mature = 1. * $p \leq .05$

An effect of maturity status (mature vs. immature) showed significantly less positive affect among immature than mature participants in months when they engaged in penetrative sex (Fig. 2a). Another significant contrast showed that semi-mature students experienced significantly less positive affect than did mature students in months when they engaged in penetrative sex (Fig. 2b).

Oral Sex

The results for oral sex in Table 2 show that gender and mature versus immature status were significant predictors of the intercept. Men's positive affect scores were 11.56 points higher than women's, and immature participants' positive affect scores were 17.85 points lower than mature participants' scores, corresponding with significant effects on the intercept for penetrative sex.

The within-time association between positive affect and engagement in oral sex (i.e., the slope) was significant. In other words, controlling for other predictors in the model, participants reported more positive affect during months in which they engaged in oral sex, compared to months in which they did not. There were also three significant between-persons predictors of this slope. In months when they engaged in oral sex, participants who reported any prior experience with penetrative sex at baseline had positive affect scores that were 9.42 points lower than students who had not previously had penetrative sex. This relation is shown in Fig. 3. The significant effect of mature versus immature status indicated that immature participants reported significantly lower positive affect than did mature participants in months when they had oral sex. The significant effect on the slope of mature versus semi-mature status indicated that semi-mature students also reported less positive affect than did mature

students in months when they engaged in oral sex. These results for the contrasts of mature with immature and with semi-mature status mirror those obtained for the association between positive affect and engagement in penetrative sex.

Negative Affect

Penetrative Sex

Table 3 shows the results of the HLM analysis that tested for effects of between-persons predictors on the within-time association of negative affect and penetrative sex. Two significant effects on the intercept were observed. Participants who lived away from parents during the first year of university reported negative affect scores that were 7.63 points higher than participants who lived with parents. This intercept difference (which is mathematically equivalent to the difference between living with and living away from parents in months when participants were not having penetrative sex) is shown in Fig. 4. Immature students also rated their negative affect 12.37 points higher than mature students.

There was a significant effect of living situation on the slope. Participants who lived away from parents reported negative affect scores that were 7.68 points lower in months when they had penetrative sex than did their sexually active counterparts who were living with parents. This result counteracts the differential between these groups in average levels of negative affect (the intercept difference). In other words, engaging in penetrative sex was associated with reduced negative affect such that the influence of living situation on average levels of negative affect disappeared (see Fig. 4).

There was also a significant effect of mature versus immature status on the association between engagement in

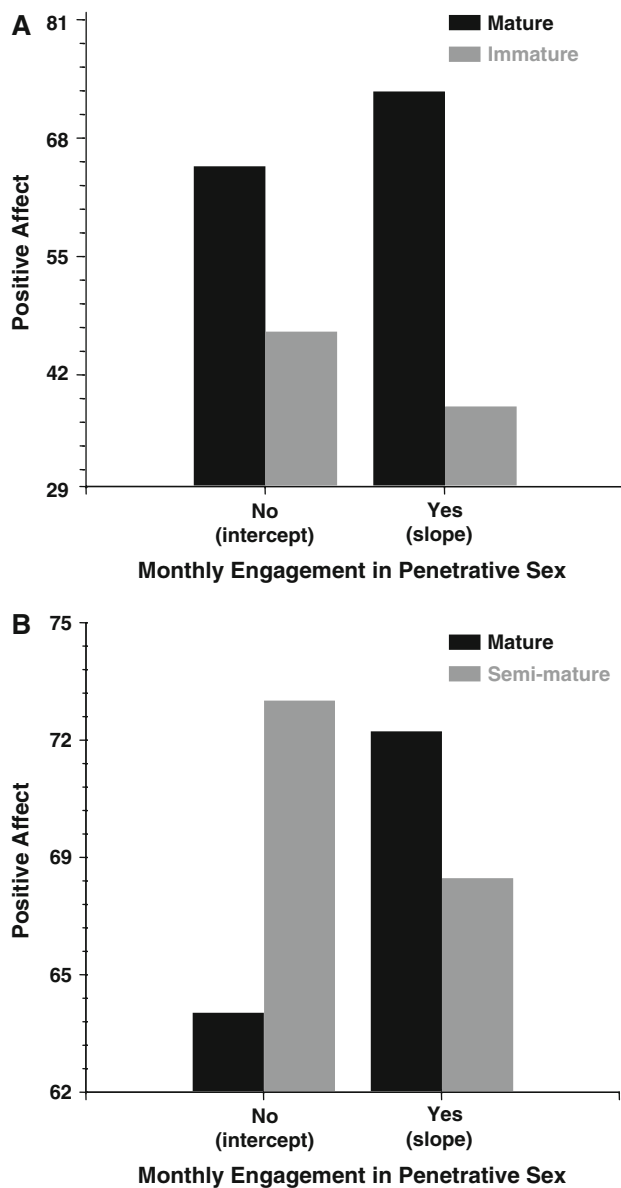


Fig. 2 The effects of maturity status on the within-time association between positive affect and monthly engagement in penetrative sex

penetrative sex and negative affect. Specifically, immature students reported significantly higher negative affect scores in months when they engaged in penetrative sex than did sexually active mature students (see Fig. 5).

Oral Sex

The model for oral sex showed that living situation was a significant predictor of the intercept, such that participants living away from parents during the first year of university reported higher negative affect scores than did those who lived with parents. There was also a significant effect of

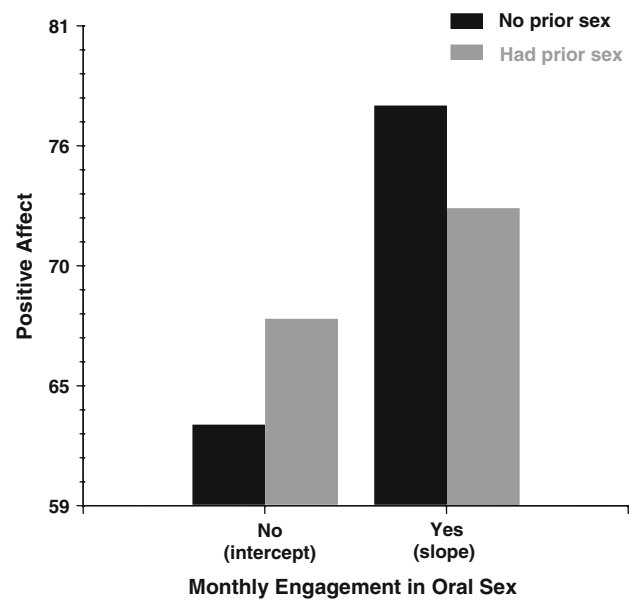


Fig. 3 The effect of prior penetrative sexual experience on the within-time association between positive affect and monthly engagement in oral sex

mature versus immature status on the intercept: immature students reported more negative affect.

With respect to predictors of the slope, living situation was significant. Participants who lived away from parents reported negative affect scores that were 10.76 points lower than participants who lived with parents in months when they had oral sex, counteracting the differential between these groups in average levels of negative affect. This finding was similar to the corresponding finding for the model of negative affect that measured engagement in penetrative sex as a covariate.

Discussion

In adopting a lifespan approach to sexual behavior in this study, we sought to identify interindividual differences (e.g., gender, psychosocial maturity) in intraindividual change (i.e., covariation between sexual behavior and two indicators of emotional well-being—positive and negative affect). Several results of this study offer support for an approach to the study of sexual behavior in which person-context relations are prioritized over indicators of risk: Greater average positive affect was associated with oral sex; permissive attitudes toward sex were associated with more positive affect in relation to penetrative sex; having engaged in penetrative sex at or before the start of the first year of university was associated with reduced negative affect in relation to oral sex; and being psychosocially mature was advantageous for most relations between sex and affect. Identification of

Table 3 Effects of between-person predictors on the within-time association of negative affect with engagement in penetrative and oral sex

Predictor	Penetrative sex		Oral sex	
	Coefficient	SE	Coefficient	SE
Average level of negative affect (intercept)	24.38	3.05	23.92	3.10
Gender ^a	-4.95	3.03	-5.09	3.06
Prior sex ^b	-1.32	4.69	-2.70	4.75
Living situation ^c	7.63*	3.18	8.70*	3.29
Attitudes toward sex	1.08	2.89	0.91	2.96
Mature versus immature ^d	12.37*	3.66	13.00*	3.76
Mature versus semi-mature ^e	5.67	4.03	5.76	4.09
Level of negative affect during months with sex (slope)	-5.82	3.18	-0.78	4.53
Gender ^a	6.82	4.24	6.21	4.33
Prior sex ^b	0.34	3.83	-0.87	4.47
Living situation ^c	-7.68*	3.24	-10.76*	4.17
Attitudes toward sex	-0.38	4.07	2.77	5.46
Mature versus immature ^d	17.87*	5.30	7.53	6.06
Mature versus semi-mature ^e	5.22	3.88	3.67	4.24

Note: $N = 177$. ^a Men = 1.

^b Had penetrative sex by baseline = 1. ^c Lives away from parents = 1. ^d Immature = 1.

^e Semi-mature = 1. * $p \leq .05$

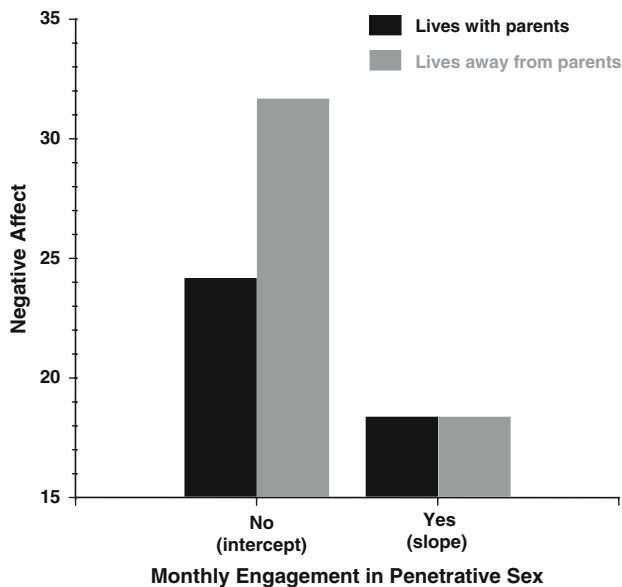


Fig. 4 The effect of living situation on the within-time association between negative affect and monthly engagement in penetrative sex

simple cross-sectional risk-related correlates of sexual behavior is insufficient to capture the complex and developmental context within which sexual behavior is situated. In the present study, we showed that the extent to which emotional experiences associated with sex are positive or negative across the first year of university depends on the type of sexual behavior, previous sexual experiences, attitudes toward sex, and living arrangements. Clearly, sexual behavior can be studied in a positive context and developmental resources (e.g., psychosocial maturity) can be associated with, and possibly promote, positive outcomes (e.g., greater

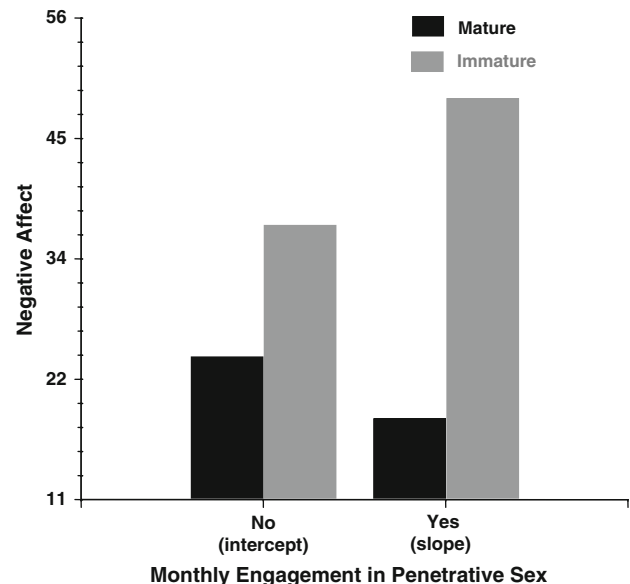


Fig. 5 The effect of maturity status on the within-time association between negative affect and monthly engagement in penetrative sex

positive affect associated with engaging in sexual behavior). Specific findings are discussed next.

We found that during months when participants engaged in oral sex, positive affect ratings were significantly higher than average. Perhaps the belief among adolescents that oral sex is less serious or intimate than penetrative sex (CAAH, 2006; Halpern-Felsher et al., 2005) contributes to first-year students' average tendency to experience positive emotions in relation to engagement in oral sex, but not in relation to penetrative sex. However, Brady and Halpern-Felsher (2007) found that penetrative sex was associated with more actual

social and emotional consequences, positive and negative, compared to oral sex. The absence of average effects of negative affect during months of sexual behavior may be due to the presence of individual differences accounting for variation in students' affective experiences linked to their sexual activities. Indeed, our second research question concerned the extent to which characteristics such as gender and living situation predicted individual differences in monthly positive and negative affect.

Several individual differences in the associations between sexual behavior and affect were found in the current study. Most prominently, the effects of maturity status showed that, relative to mature students, immature students reported lower positive affect in months when they engaged in penetrative and oral sex and higher negative affect in months when they engaged in penetrative sex. Semi-mature students, compared to mature students, also reported less positive affect in months they engaged in penetrative and oral sex. These results suggest that associations between sexual behavior and affect might reflect positive development among students who are psychosocially mature. Students classified as immature should be particularly wary of engaging in sexual activities, because their average positive affect was lower and average negative affect was higher than for mature students, and sexual activity amplified this difference.

Consistent with our prediction, more permissive attitudes toward sex were associated with greater positive affect during months in which participants engaged in penetrative sex. Sexual attitudes may distinguish students whose sexual developmental timelines are in line with their behaviors from those whose timelines are delayed relative to their sexual behaviors. This can be interpreted as “good news” given findings that sexual attitudes have become more permissive over time (Bibby & Posterski, 1992; Herlitz & Ramstedt, 2005; Wells & Twenge, 2005). Specifically, as permissive attitudes become more widely adopted, it is possible that more individuals engaging in sexual behaviors for the first time will be psychologically prepared to do so.

Living away from parents had positive implications for participants who engaged in oral and penetrative sex with regard to negative affect ratings. On average, individuals who lived away from parents tended to report higher negative affect compared to individuals who lived at home during the first year of university. This finding is consistent with other studies (Galambos & Krahn, 2008; Seiffge-Krenke, 2006) documenting more depressive symptoms among young people who left home early during the transition to adulthood. Interestingly, negative affect ratings in the current study were reduced during months in which participants who had left home engaged in penetrative and oral sex. Given that living situation did not moderate the relation between sexual behavior and positive affect, this finding suggests that being sexually active while living away from parents during the first

year of university may compensate for negative emotions experienced among those who had left home.

Prior sexual experience was significant for explaining the relation between oral sex and positive affect. Participants with prior penetrative sexual experience at baseline reported lower positive affect in months when they had oral sex compared to their counterparts who came into the study with no penetrative sexual experience. This result supports the idea presented earlier that sexually inexperienced participants may have waited until they were ready to engage in oral sex. The positive relation between oral sex and positive affect was not as strong for the participants who came into the study with penetrative sexual experience, but positive emotion and oral sex were significantly linked even after controlling for prior sex. Despite the significance of prior sexual experience, the overall average relation between oral sex and positive emotion was striking. Again, we have evidence that sexual behavior during the transition to adulthood might be indicative of positive youth development, rather than representative of a high-risk lifestyle.

We expected that men would experience greater positive affect and less negative affect during months of engagement in penetrative and oral sex. Surprisingly, the relations between sexual behavior and affect did not differ for men compared to women. Perhaps the absence of a gender difference was due to controlling for permissive attitudes, which are generally stronger in men than women (Oliver & Hyde, 1993). The lack of a gender difference in sex–affect relations on a monthly basis calls into question the accuracy of the popular notion that men have more to gain from engaging in sexual behavior.

Limitations

The current study was by no means an exhaustive investigation of relations between sexual behavior and affect. Indeed, detailed information regarding participants' sexual activities and their perceptions thereof would undoubtedly have provided valuable insights into the nature of these sex–affect relations, but were not measured in this sample. For example, the perception that oral sex is less risky than penetrative sex may partially explain the presence of average covariation between oral sex and positive affect, but not between penetrative sex and positive affect. Furthermore, to the extent that oral sex is more strongly associated with orgasm among women, the presence of average covariation between oral but not penetrative sex and positive affect may also be explained.

The context in which sexual behavior takes place is also important to understanding the nature of associations between sexual behavior and affect. For example, which students had sex in the context of a committed relationship, and which students engaged in casual sexual encounters?

Furthermore, we cannot be certain that all reported sexual activities were consensual. To the extent that relationship status and quality moderate positive development as indexed by sex–affect associations, this variable should be included in future studies.

Certain methodological limitations should also be noted. Most significantly, participants were asked about their sexual activities over an entire month on each questionnaire, but were only asked to reflect back on 2 weeks of affective experiences. This introduces a source of unexplained variation in that some participants may have had sex during the same time frame from which affect was reported, whereas others may have had sex prior to their affect reports. Still others may have had sex during both periods. Thus, we are careful not to draw any causal conclusions based on these results.

Finally, although students were assessed in terms of change across the first year of university, a complete picture of the transition to university is not possible because measures of students' sexual behavior, affect, and person-level characteristics were not taken prior to students' arrival at the university. Some studies of the transition to university (e.g., Jackson, Pancer, Pratt, & Hunsberger, 2000) assessed students in the summer prior to their entry, which is a more powerful design for measuring the actual process of moving into a new context. A particular strength of this study is its repeated measures design which systematically tracked first-year students on a monthly basis across a very important transition in their lives. The high rate of monthly questionnaire completion was also a notable strength.

Results of the current study clearly demonstrate the importance of applying an alternative theoretical framework to the risk orientation. Following a lifespan approach, we have revealed associations between sexual behavior and affect reflecting developmental norms (e.g., average rates of sexual behavior and affect), intraindividual change over time (e.g., covariation between monthly engagement in oral sex and positive affect), and interindividual differences in time-varying relations (e.g., effect of maturity status on sex–affect relations). These results are a first step toward reframing risk-oriented questions of sexual behavior in adolescence and the transition to adulthood. The associations between sex and emotional experiences, moderated by individual differences, suggest that, at least for university students, engagement in sexual behavior can be a positive aspect of the first-year experience, and may potentially reflect positive sexual development.

Questions still remain as to how the results of this study fit into a broader context of positive youth development. We have shown that the lifespan approach can be applied to the study of sexual behavior as an alternative to the risk orientation, but the lifespan approach as framed by a positive youth development perspective really sets the stage for the

formation of a concept of healthy sexuality and sexual development, particularly among youth. Just as there are risks associated with engaging in sexual behavior (e.g., relationship dysfunction, rejection, sexually transmitted infections), there are benefits as well (e.g., intimacy, physical pleasure). A positive youth development perspective presupposes that youth already possess the assets and resources that will allow them to maximize the benefits of sexuality, minimize the risks, and mitigate any negative consequences that may arise. Young people who are sexually active may be characterized as *healthy* to the extent that they are capable of deriving benefits from their sexual experiences and minimizing risks. For example, individuals engaging in intercourse with trustworthy and respectful partners who exhibit planful contraceptive and STI-prevention practices embody the notion of healthy sexuality. In contrast, individuals engaging in intercourse in the context of a relationship characterized by emotional volatility, and who rely on a sense of invulnerability to harm to marginalize risks embody the notion of risk-oriented sexual development.

By this definition, then, healthy sexual development occurs when young people seek out sexual experiences in accordance with a timeline that is aligned with the emergence of developmental resources needed to maximize the benefits and minimize the risks associated with their experiences. In the current study, the alignment of positive affect with sexual behavior contingent on mature status supports this hypothesis. To further evaluate sexual behavior from a positive, lifespan development perspective, research should determine the extent to which relations between sexual behavior and other emotional, social, and psychological experiences are present and contingent upon the presence of developmental assets and resources. Additional repeated-measures studies that explore these associations will broaden our understanding of healthy sexual development and help to promote the importance of studying sexuality from a positive development perspective.

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