JOURNAL OF RESEARCH ON ADOLESCENCE, 14(3), 313–340

Sexual-Minority and Heterosexual Youths' Peer Relationships: Experiences, Expectations, and Implications for Well-Being

Lisa M. Diamond and Sarah Lucas

University of Utah

The current study compared the peer relationships and well-being of 60 sexual-minority (i.e., nonheterosexual) and 65 heterosexual youths between the ages of 15 and 23. Sexual-minority youths had comparable self-esteem, mastery, and perceived stress as did heterosexuals, but greater negative affect. Younger sexual-minority male adolescents had smaller overall peer networks than did young male heterosexuals, whereas older male and female sexual minorities had larger numbers of extremely close friends within their networks than did heterosexuals. Younger sexual-minority adolescents had lost or drifted away from more friends than did heterosexuals. Regardless of age, sexual-minority youths reported disproportionately high worries about losing friends, low feelings of control in their romantic relationships, and fears of never finding the type of romantic relationship they wanted. Sexual-minority youths that were ''out'' to more heterosexual peers had larger peer networks but more friendship loss and friendship worries. Youths' relationship experiences and concerns mediated sexual identity differences in negative affect.

Supportive peer relationships are important buffers against the impact of major and minor stressors at all stages of life, but they may be particularly important for *sexual-minority* (i.e., nonheterosexual) youths, given these youths' potential exposure to both internalized and overt stigma. Investigating associations between peer relationships and well-being among

Requests for reprints should be sent to Lisa M. Diamond, Department of Psychology, 380 South 1530 East, Room 502, Salt Lake City, UT 84112-0251. E-mail: diamond@psych.utah.edu

both sexual-minority and heterosexual youths is important for bolstering our emerging understanding of the multiple ways in which a youth's sexual identity shapes basic processes of adolescent social development. It may also aid in the interpretation of mental health differences that have been detected in some (primarily male) samples of sexual-minority and heterosexual youths (Hart & Heimberg, 2001; Safren & Heimberg, 1999). Yet before we can generate and test targeted hypotheses on these issues, we require basic, foundational information on associations among youths' sexual identity, their peer relationships, and their psychological well-being. The present research provides such information by comparing sexual-minority and heterosexual youths' interpersonal experiences and expectations from middle adolescence to early adulthood and testing whether sexual-identity differences in their relationship experiences and expectations mediate sexual-identity differences in mental health outcomes.

Sexual Identity and Peer Relationships

Historically, little research attention has been paid to sexual-minority youths' friendships and romantic relationships (reviewed in Diamond, Savin-Williams, & Dubé, 1999). These relationships clearly deserve closer study, given the salience and importance of peer acceptance and companionship during the teen years (Coleman, 1961; Sullivan, 1953). From early adolescence to young adulthood, youths increasingly turn to peers rather than parents for day-to-day advice, companionship, loyalty, and emotional support (Hazan & Zeifman, 1994). Sexual-minority youths might place particular importance on friendships given that many experience or fear parental disapproval and rejection as a result of their same-sex orientation (Savin-Williams, 1998). Notably, research indicates that many sexual-minority adults increase their emotional investments in close friends to compensate—consciously or unconsciously—for low familial support (Nardi & Sherrod, 1994), and this might lead sexual-minority adolescents to prioritize close over casual friendships.

Yet paradoxically, these youths may face several obstacles in maintaining supportive peer ties. Researchers have found that the lack of close friendships—as well as the loss of such ties—is a common concern among sexual-minority youths (Anhalt & Morris, 1998; D'Augelli & Hershberger, 1993; Grossman & Kerner, 1998; Hart & Heimberg, 2001). Not only do some sexual-minority youths lose friends as a direct result of disclosing their same-sex orientation (Remafedi, 1987), but others may feel that they cannot become too intimate with friends, lest platonic intimacy be misconstrued as sexual interest (Martin & Hetrick, 1988). These factors

might not only lead sexual-minority youths to have smaller peer networks but might hamper the degree of closeness sexual-minority youths develop with friends, as well as their feelings of control over friendships.

Sexual-minority youths might face similar problems in their romantic relationships. Given widespread stereotypes portraying same-sex relationships as inherently fleeting and unhealthy, sexual minority youths may have low expectations for romantic satisfaction (Diamond et al., 1999). Also, homophobia and stigmatization might lead some youths to view themselves as unattractive and undesirable, heightening expectations for romantic rejection (Hart & Heimberg, 2001). Finally, the difficulty sexual-minority youths face in simply finding desirable and eligible same-sex partners may lead them to develop few romantic relationships, to have negative expectations about romantic problems, and to feel that they have little control over their romantic lives.

Moderating Effects of Age and Outness

A youth's developmental stage might moderate the aforementioned predicted differences in relationship experiences and expectations. One reason to expect this pattern is that peer network size and friendship intimacy typically peak during middle rather than late adolescence, after which youths increasingly seek support and intimacy from romantic ties (Connolly & Johnson, 1996). Also, youths' interpersonal skills for managing social challenges are less well developed in middle than in late adolescence, which might facilitate fears and experiences regarding friendship loss (see Buhrmester, 1996). As a result of such factors, differences between sexual-minority and heterosexual youths' friendship experiences and expectations might be more pronounced for younger rather than older youths. However, the opposite is likely to be true with respect to romantic experiences and expectations. Given that romantic ties take on increasing saliency and importance as youths move from middle to late adolescence (Connolly & Goldberg, 1999; Hazan & Zeifman, 1994), sexual-identity differences in this domain may be more pronounced among older rather than younger youths.

The degree to which a youth is open about his or her sexual orientation is another potential moderator. Given prior research emphasizing the importance of sexual-minority youths' fears of having their same-sex sexuality discovered and stigmatized (Martin & Hetrick, 1988), youths who are more secretive about their same-sex sexuality might be particularly likely to experience compromised relationships and expectations. This is one reason, in fact, that advocates for sexual-minority youths have long

promoted the creation of safe, supportive ''gay–straight alliances'' where youths can be open about their sexuality without facing the risk of peer rejection (Lee, 2002). Youths that are more ''out'' might be better able to identify which of their peers are supportive versus stigmatizing and to build their friendship networks accordingly. This might increase their feelings of closeness and control with friends. Similarly, youths that are more out might more easily meet potential romantic partners, and this might give them a greater feeling of confidence and control in their romantic relationships.

Relationships as a Potential Mediator of Sexual-Identity Differences in Well-Being

One reason it is important to compare directly sexual-minority and heterosexual youths' peer relationships is that differences in this domain might partially explain the widely documented finding (albeit based on predominantly male samples) that sexual-minority youths tend to report greater depression, anxiety, and adjustment problems, and lower self-esteem, than heterosexuals (reviewed in Anhalt & Morris, 1998; Hart & Heimberg, 2001). The possibility that negative experiences and expectations in peer relationships are directly related to sexual-minority youths' mental health is suggested by research indicating that friendship quality is significantly associated with adjustment and well-being among both heterosexuals (Pawlby, Mills, Taylor, & Quinton, 1997) and sexual minorities (Berger & Mallon, 1993). In fact, one recent study (Safren & Heimberg, 1999) found that sexual-minority youths' low satisfaction with social support partially accounted for their disproportionately high depression and hopelessness. As for romantic relationships, research on heterosexual youths has found that the strongest positive and negative emotions that adolescents experience are triggered by their romantic ties (Larson, Clore, & Wood, 1999), rendering romantic difficulties highly significant stressors. Supporting this view, romantic problems have been found to be among the most common triggers for suicide attempts by sexual minorities (Hershberger & D'Augelli, 2000) and have been associated with heightened rates of depression, truancy, and substance abuse (Anderson, 1987; Mercier & Berger, 1989; Savin-Williams, 1994).

The Current Study

This study directly compared sexual-minority and heterosexual youths' experiences and expectations regarding friendships and romantic

relationships, examines the moderating effects of age and outness, and investigates whether sexual identity differences in peer relationships mediate sexual-identity differences in psychological well-being. Specifically, we tested the following four hypotheses:

- Hypothesis 1: In comparison with their heterosexual counterparts, sexual-minority youths will report higher levels of anxiety, depression, physical symptomology, and perceived stress, and lower levels of self-esteem and mastery.
- Hypothesis 2: In comparison with their heterosexual counterparts, sexual-minority youths will have smaller peer networks, and a greater proportion of their networks will be composed of close rather than casual friends. Nonetheless, they will report fewer feelings of connectedness to friends and less perceptions of control over their friendships. Regarding romantic relationships, sexual-minority youths will report fewer romantic relationships, more worries about finding the kind of romantic relationships they want, and less feelings of control over their romantic lives.
- Hypothesis 3: Both age and outness will moderate the aforementioned predicted relationship differences. Specifically, friendship differences will be more pronounced among younger sexual-minority youths, whereas romantic differences will be more pronounced among older youths. As for outness, the aforementioned sexual identity differences will be more pronounced among sexual-minority youths that are more secretive to peers about their sexual orientation.
- Hypothesis 4: Differences between sexual-minority and heterosexual youths' relationship experiences and expectations will partially mediate differences between their mental well-being.

METHOD

Participants

Participants were 125 youths between the ages of 15 and 23 living in Salt Lake City, Utah. The sexual-minority sample comprised 32 females and 28 males; the heterosexual sample comprised 35 females and 30 males. Sexual-minority participants were recruited through adult-supervised lesbian, gay, and bisexual youth activities sponsored by the Gay and Lesbian Center of Salt Lake City and gay–straight alliances in several local high

schools. These forums provide sexual-minority youths with a safe environment to socialize; watch movies; engage in games or athletic activities; and discuss lesbian, gay, and bisexual issues. Neither of these settings, however, is a clinically oriented support group or coming-out group. In all, 92% of youths that were approached agreed to participate. Heterosexual youths were recruited from the 10th-, 11th-, and 12th-grade classes at a local public high school and from undergraduate classes at the local university. In the high schools, 95% of youths who were offered the opportunity to participate did so, and approximately 50% of college students that were offered the opportunity to participate did so (we suspect that the low response rate among college students is attributable to the fact that undergraduates are solicited for research participation by a variety of sources, and therefore research requests such as ours face a considerable amount of competition for youths' time). Of the 116 heterosexual respondents recruited from these sites, 65 were selected for inclusion in the study (37 from the local high schools and 28 from the university) based on matching for age and self-reported socioeconomic status (SES) with the sexual-minority sample. Examination of consent forms verified that none of the youths recruited into the study in the high school or college settings had also been recruited into the study at the sexual-minority settings.

Sexual identity was assessed by asking respondents to select the term that best described their current sexual identity: *lesbian, gay, bisexual, heterosexual*, or *unlabeled*. Two additional checks on youths' sexual identity classification were provided by: (1) a questionnaire item asking how long sexual-minority youths had known they were not heterosexual and how long they had maintained a nonheterosexual identity, and (2) questionnaire and interview items inquiring about prior or current sexual attractions and relationships with males and with females. All of the respondents recruited from the high school and college settings identified as heterosexual, but 2 indicated having experienced same-sex attractions or relationships, or both, and were not included in the study. Of the youths recruited at the sexual-minority sites, 8 identified as heterosexual and were not included in the study. One male and 9 female youths identified as bisexual, and 1 male and 7 female youths identified as unlabeled. The bisexual and unlabeled youths were retained in the study based on the fact that all of them experienced same-sex attractions and reported having considered themselves nonheterosexual for 1 to 3 years, indicating that they were, in fact, sexual minorities rather than confused or curious heterosexuals. It also bears noting that previous research has found that most sexual minorities traverse a substantial period during which they acknowledge same-sex attractions but do not (and might never) claim a

lesbian, gay, or bisexual identity (Cohen & Savin-Williams, 1996), and such individuals have not been found to differ substantially from openly identified lesbian and gay youths (Diamond, 1998). Thus, recent studies have made special efforts to include unlabeled sexual minorities to maximize the representativeness of sexual-minority research samples, usually by selecting research participants on the basis of their same-sex attractions rather than their lesbian, gay, or bisexual identification (see Russell & Consolacion, 2003).

To permit direct examination of similarities and differences between youths recruited at the two sites, demographic information for each group is presented in Table 1. The extent of comparability between these two groups is addressed at length in the Discussion section.

Procedure

All study participants completed a detailed questionnaire and a qualitative telephone interview. All materials were the same across recruitment sites, except that questions about participation in sexual-minority activities and outness did not appear on the questionnaires distributed at the high school and college settings. The current report includes only the questionnaire data; qualitative analyses of the interview data are being reported elsewhere. The study was described to potential participants as an investigation of how adolescents' participation in close friendships and romantic relationships influences the way they cope with day-to-day events. Sexual-minority youths who agreed to participate were given a packet containing the study questionnaire, preaddressed mailing envelopes, consent forms, and information about the telephone interview. Parental consent was obtained from youths under the age of 18. Although the parental consent forms made no mention of sexual identity, some sexual-minority youths feared that the process of obtaining parental consent might arouse parents' suspicions of their sexual identity. These youths were given the option of designating a nonparental adult to provide parental consent, such as a teacher, therapist, or relative. High school students completed the questionnaires in class after bringing back signed parental consent forms. University students who responded to announcements about the study in undergraduate psychology courses were given questionnaire packets to take home and returned completed questionnaires by mail. All respondents received $5 for completing the questionnaire and an additional $10 for completing the interview.

TABLE 1
Sample Characteristics

	Sexual-Minority %	*Heterosexual %*	*Total %*
Ethnicity			
White	81	83	82
African American	2	8	5
Latino	0	2	1
Asian American	6	2	4
Mixed	6	2	4
Other	4	4	4
Family structure growing up*			
Both natural/adopted parents	43	60	52
One natural/adopted and one stepparent	18	18	18
One parent only	37	17	26
Other	2	5	3
Socioeconomic status*			
Working class	12	5	8
Lower middle class	37	11	23
Upper middle class	47	75	62
Upper class	5	9	7
Family political orientation*			
Liberal	37	20	28
Moderate	36	54	45
Conservative	27	26	27
High school			
Public	90	100	96
Private or religious	2	0	.8
Alternative	8	0	4

Note. Some columns sum to less than or more than 100% because of rounding error. Variables marked with an asterisk are significantly associated with sexual identity, $p < .05$.

Measures

In addition to gender and ethnicity, the following domains were assessed.

Family structure. Youths were asked to indicate whether, during most of their high school years, they lived with two natural or adopted parents, one natural or adopted parent and a stepparent, or one parent only.

Self-perceived socioeconomic status. Youths were asked to rate their perceptions of their family's economic situation on a scale of 1 to 4, where

1 = working class, 2 = working to middle class, 3 = middle to upper class, and 4 = upper class.[1]

Family political orientation. Youths were asked to rate their family's political orientation regarding social issues on a scale of 1 to 5, where 1 = very liberal, 2 = liberal, 3 = moderate, 4 = conservative, and 5 = very conservative.

Sexual-minority activities. Sexual minorities were asked to indicate how often they participated in sexual-minority activities, operationalized as attending social events, political events, parades, or discussion groups held at gay/lesbian/bisexual/transgendered (GLBT) community centers, or sponsored by GLBT organizations (rarely or never, once every few months, once every few weeks, or at least once a week) and how many of their friends were sexual minorities (none, 1–2, 3–5, more than 5).

Outness. To assess the degree to which sexual minorities were open about their sexuality, they were asked to indicate (by marking yes or no) whether each of the following groups of individuals knew that they were *not heterosexual* (we chose this terminology so that the question would be answerable by unlabeled sexual minorities): close friends and acquaintances, casual friends and acquaintances, and mother and father. Because sexual-minority youths who participate frequently in sexual-minority community activities might have mainly sexual-minority friends, this information does not necessarily indicate how out youths are to heterosexual peers, which might be considered a more valid measure of a youths' openness. We therefore asked youths to indicate how many of their heterosexual friends knew that they were not heterosexual (none, 1–2, 3–5, more than 5).

Social network. Respondents' social networks were assessed using the social convoy diagram (Antonucci, 1986). The diagram contains three concentric circles, and respondents are instructed to place in the innermost

[1] We did not collect information on actual parental income because we found in pilot assessments that younger adolescents often did not know their parents' income, raising the possibility that objective measures of self-perceived SES might prove to be more accurate for older than younger youths. Asking parents themselves was not always possible, as some youths did not want their parents to know they were completing the survey (as noted earlier, these youths designated a nonparental adult to provide consent for their participation). For these reasons, we elected to assess youths' perceptions of their family's SES, although we do not have formal validity information on these self-reports.

circle ''those people to whom you're so close that it's hard to imagine life without,'' in the middle circle people ''to whom you're not quite as close, but who are still very important,'' and in the outermost circle ''other people who are important enough that they belong in the network.'' Respondents were asked to identify friends with initials, romantic partners with the term *boyfriend/girlfriend*, and family members with terms such as *mother*, *cousin*, and so on. The number of friends and family members in the total network and in the innermost circle was tabulated. We did not count boyfriends or girlfriends as friends to avoid artificially inflating (albeit only by one individual) friendship networks among youths who happened to be in a romantic relationship at the time of the study. To ensure that this was not distorting the findings, we repeated all analyses after recomputing network size to include current romantic partner, and none of the results was changed.

Friendship experiences and expectations. The three measures of friendship experiences and expectations were: (1) friendship loss, operationalized as the number of friends that respondents had lost or drifted away from during the past year (respondents were asked to indicate the exact number); (2) friendship fears, assessed by averaging respondents' agreement (on a 5-point scale, where 1 = very untrue, 2 = somewhat untrue, 3 = neutral, 4 = somewhat untrue, and 5 = very true) with the following items: ''When I have a conflict with a friend, I'm afraid the friendship might end,'' and ''I worry about losing my friends or drifting apart from them'' (interitem $r = .56$); (3) perceptions of control in friendships, assessed by averaging agreement (on the same 5-point scale described earlier) with the following items: ''I can pretty much control how my friendships are going,'' and ''I can pretty much control how my friendships end'' (interitem $r = .42$).

Romantic experiences and expectations. The three measures of romantic experiences and expectations were: (1) total number of respondent's romantic relationships with females and males (including all relationships the youth has ever had, including current relationships), defined as ''a relationship lasting at least three weeks in which both you and the other person agree that you're going out with each other''[2]—

[2] We established this length criterion to eliminate more casual or fleeting dating experiences. Analyses of National Longitudinal Study of Adolescent Health (Add Health) data demonstrate that adolescent male–male romances, in particular, tend to be short in duration (among 15-year-olds, the mean duration was 6 weeks), and thus a minimum duration of half that period (3 weeks) can be presumed to capture successfully most adolescent romances without inappropriately including more fleeting dates.

youths were asked to indicate, separately, the number of relationships with female partners and the number of relationships with male partners; (2) romantic fears, assessed by respondents' agreement (on the same 5-point scale described earlier) with the statement, "I'm afraid I'll never have the kind of romantic relationship I want"; (3) perceptions of control in romantic relationships, assessed by averaging respondents' agreement (on the same 5-point scale described earlier) with the following items: "I can pretty much control how my romantic relationships are going," and "I can pretty much control how my romantic relationships end" (interitem $r = .52$).

Feelings of connectedness. Feelings of connectedness to friends was assessed with the Social and Emotional Loneliness Scale (SELSA; DiTommaso & Spinner, 1993). The scale yields three connectedness scores: one for friendships, one for family relationships, and one for romantic partners (the scale is premised on the notion that low connectedness to friends indexes social loneliness, whereas low connectedness to family members or romantic partners indexes a deeper emotional loneliness). Only the friendship score is used in the current analyses. A sample item for friendship connectedness (six items, Cronbach's alpha = .79) is: "My friends understand my motives and reasoning." Respondents rated their agreement or disagreement using the same 5-point scale described earlier.

Mental health. The Depression, Self-Esteem, and Well-Being subscales of the Weinberger Adjustment Inventory (short form) were administered (Weinberger & Schwartz, 1990). This scale has been widely used in previous research on mental well-being in adolescent and young adult populations. Each subscale has 7 items (Cronbach's alphas = .87, .84, and .79, respectively). Anxiety was assessed with an abbreviated 11-item version of the State–Trait Anxiety Inventory (Spielberger, 1983; Cronbach's alpha = .77). Physical symptoms were assessed with a subset of 15 items from the Subjective Mental Health Scale (Bryant & Veroff, 1984). These items assessed the frequency of stress-related physical symptoms such as damp and clammy hands, headaches, indigestion, shortness of breath, having sufficient energy to carry out desired activities, and so on (Cronbach's alpha = .90). Respondents completed the 12-item Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) to assess the degree to which they felt stressed in the previous month (Cronbach's alpha = .89). Finally, respondents completed the 7-item Mastery and Self-Efficacy Scale (Pearlin, Lieberman, Menaghan, & Mullan, 1981; Cronbach's alpha = .72). All of the mental health items used a 4-point

scale, where 1 = almost never felt this way, 2 = sometimes felt this way, 3 = often felt this way, and 4 = almost always felt this way. Because the measures of depression, anxiety, and physical symptoms were found to be highly intercorrelated (average interitem $r = .71$), they were averaged and treated as a composite measure of negative affect (Cronbach's alpha = .89). We did not include perceived stress in the negative affect measure because of its conceptual distinction from the other well-being measures. Specifically, whereas the other well-being measures ask about feelings in general, the perceived stress measure focuses on stress experienced in the past month. Given that sexual-minority youth are widely characterized as experiencing greater day-to-day stress than other youths as a result of social stigmatization, we thought it was particularly important to keep this measure distinct from other well-being measures to facilitate clear-cut tests for sexual-minority/heterosexual differences on this dimension.

RESULTS

All statistical tests were conducted with alpha = .05. The overall analytic plan was to examine overall sample characteristics and then to test Hypotheses 1 to 4 in turn. The mediation test of Hypothesis 4 followed the criteria for mediation tests outlined by Baron and Kenny (1986). One outlier was deleted from the sample; this sexual-minority respondent listed 45 individuals in his social network, which was approximately 4 *SD* above the sample mean. Follow-up analyses found that none of the findings was changed by the deletion of this case. Also, all analyses were repeated after deleting unlabeled sexual minorities to determine whether the inclusion of these individuals distorted the results. None of the findings was changed after deleting these individuals. For purposes of normalization, square root transformations were applied to all social network variables and logarithmic transformations were applied to number of friends lost and number of romantic relationships.

Sample Characteristics

Summary statistics for all study variables are presented in Table 2 and correlations among measures are presented in Table 3 (for these correlations, the dichotomous variables of gender, sexual identity, and family structure are dummy coded, with females, heterosexuals, and two-parent families coded as the base category). A one-way analysis of variance (ANOVA) predicting age from gender and sexual identity found that

TABLE 2

Summary Statistics for Major Variables, With Regression Coefficients for Hypothesized Sexual Identity and Interaction Effects in Models Controlling for Age, Gender, Family Structure, and Self-Perceived SES

	Sexual Minorities		*Heterosexuals*		$\beta_{Sexual\ Identity}$ *(PV)*	$\beta_{Interaction\ Effect}$ *(PV)*
	M	*SD*	*M*	*SD*		
Number of peers in network	6.9	4.7	9.8	6.9	−.17 (.02)	Age × Sexual Identity × Gender: −.14** (.06)
Proportion of friends that are inner circle relationships	.33	.25	.22	.29	.07* (.05)	Age × Sexual Identity: .04* (.05)
Number of friends lost	4.2	3.8	3.4	2.1	.18* (.04)	Age × Sexual Identity: −.12* (.04)
Worry or fear over losing friends	3.1	1.2	2.2	0.9	.44*** (.13)	SES × Sexual Identity: .31* (.03)
Connectedness to friends	3.9	0.7	4.1	0.7	−.06 (<.01)	
Perceived control in friendships	3.3	0.9	3.5	0.7	−.24 (.01)	
Number of romantic relationships (RR)	5.0	4.0	6.1	7.0	−.09 (<.01)	
Fears of not finding desired type of RR	3.4	1.6	2.5	1.4	.30* (.03)	
Perceived control in RRs	2.7	1.0	3.3	0.8	−.26** (.06)	
Negative affect	2.9	0.7	2.5	0.7	−.17* (.05)	
Perceived stress	3.0	0.6	2.9	0.5	−.05 (.01)	
Self-esteem	3.7	0.8	3.9	0.8	.02 (.01)	
Mastery	3.6	0.6	3.7	0.7	.73 (.01)	

Note. PV denotes effect sizes, represented as the percentage of variance in the dependent variable uniquely explained by the independent variable (see Murphy & Myors, 1998). *PV* can be calculated as Cohen's (1988) commonly used *d* statistic (defined as the difference between group means, divided by their pooled standard variation) as follows: $PV = d^2/(d^2+4)$. Where Cohen referred to *d*s of .02, .5, and .35 as denoting small, medium, and large effects, respectively, these reference points translate to *PV* values of .01, .10, and .25.

*$p < .05$; **$p < .01$; ***$p < .001$.

TABLE 3
Correlations Among Study Variables

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*
1. Age	—																		
2. Gender	.10	—																	
3. Sexual identity	.16	−.01	—																
4. Family structure	.15	−.24***	.21*	—															
5. Family political orientation	.08	−.01	−.12	−.10	—														
6. Self-perceived SES	−.02	.16	−.31***	−.18*	.11	—													
7. Peer network size	−.10	.03	−.19*	−.29**	.12	.10	—												
8. Proportion of friends that are inner circle relationships	−.08	.09	.20*	.08	−.14	−.18	−.21*	—											
9. No. of friends lost	−.18	−.24*	.14	.06	.01	−.16	.14	.06	—										
10. Worry or fear over losing friends	.04	−.18*	.38***	.14	−.06	−.15	−.03	.09	.33***	—									
11. Connectedness to friends	−.16	.05	−.16	−.10	−.04	.19*	.35***	.18	−.03	−.17	—								

12. Perceived control in friendships	−.07	.25**	−.11	.04	−.03	.07	.09	.08	−.20*	−.23*	.28**	—						
13. No. of romantic relationships (RR)	−.01	−.13	−.04	.06	−.13	−.20*	.05	.12	.22*	.08	.10	.07	—					
14. Fear of not finding desired type of RR	.12	.13	.25**	.04	.01	−.22*	−.16	−.15	−.07	.22*	−.39	−.18*	.03	—				
15. Perceived control in RRs	−.14	−.03	−.31***	−.06	.01	.15	.05	.18	−.07	−.14	.32***	.44***	.20*	−.52***	—			
16. Negative affect	−.03	−.15	.27**	.24**	.04	.22*	−.13	−.02	.31**	.39***	−.48***	−.28**	.09	.50***	−.43***	—		
17. Perceived stress	.05	−.18*	.11	.13	.06	.17	−.02	.10	.37***	.33***	−.37***	−.33***	.12	.28***	−.38***	.84***	—	
18. Self-esteem	.15	.16	−.06	−.19*	−.11	.15	.17	−.02	−.29**	.36***	.45***	.23*	−.11	−.32***	.26**	−.71***	−.59***	—
19. Mastery	.17	.16	−09	−.18*	−.13	.09	.17	.01	−.15	−.35***	.42***	.30**	−.06	−.28**	.26**	−.68	−.59***	.67***—

Note. For normalization, variables 2, 3, and 4 were subjected to a square root transform and 6 and 11 were subjected to a logarithmic transform.
*$p < .05$; **$p < .01$; ***$p < .001$.

sexual minorities were slightly older than their heterosexual counterparts, $F(1, 120) = 3.3$, $p = .07$. There was no significant association between gender and age, and no Gender × Sexual Identity interaction. Mean age among each gender and sexual identity subgroup was as follows: sexual-minority females, 18.0 ($SD = 1.9$); sexual-minority males, 18.7 ($SD = 1.8$); heterosexual females, 17.7 ($SD = 1.8$); and heterosexual males, 17.7 ($SD = 1.8$). Sexual minorities also had lower self-perceived socioeconomic status ($t = 2.6$, $p = .01$) and were more likely to have been raised in single-parent homes, $\chi^2(1, N = 125) = 5.22$, $p < .05$. There were no associations between age and any of the demographic variables, either in the sample as a whole or within the sexual-minority and heterosexual subsamples. In all, 82% of the sample was White.

Male sexual-minority youths reported having first known they were not heterosexual at a mean age of 10.3 years, compared with 12.2 among the female sexual-minority youths ($t = 2.0$, $p < .05$). More than half of the sexual-minority youths took part in lesbian, gay, or bisexual activities at least once a month, and nearly 80% reported having more than five lesbian, gay, or bisexual friends. Nearly 70% reported that they were out (i.e., open about their sexual orientation) to at least five of their heterosexual friends and 63% were out to their parents. Among the unlabeled individuals, half were out to five or more heterosexual friends, half were out to their mother or father, and half were out to close and casual friends. These findings provide further confirmation that unlabeled individuals do, in fact, consider themselves sexual minorities and use the same discretion in disclosing this information to others. For purposes of analyses, we divided respondents into out and closeted groups on the basis of whether five or more of their heterosexual friends knew about their sexual identity. Not only was this intuitively meaningful, but this categorization was strongly associated with whether a youth's mother or father, $\chi^2(1, N = 59) = 4.5$, $p < .04$; close friends, $\chi^2(1, N = 59) = 8.86$, $p < .003$; or casual friends, $\chi^2(1, N = 59) = 9.88$, $p < .002$, knew about his or her sexual identity.

Main Effects of Sexual Identity on Relationships and Well-Being

A multiple regression approach (Aiken & West, 1991) was adopted for analyses of the relationship and well-being measures. Each regression included age, gender, sexual identity, family structure (single-parent vs. two-parent home), and youths' self-perceived SES, and hypothesized interactions. Following West, Aiken, and Krull (1996), continuous independent variables were centered before entry into the regression

equations, categorical variables were effect coded, and interactions were tested with cross-product terms. Only interactions that were statistically significant were retained in final models. Standardized coefficients and effect sizes for the hypothesized main and interaction effects are presented in Table 2.

There were significant differences between sexual-minority and heterosexual youths of average age[3] for negative affect, $F(1, 116) = 5.37$, $p < .05$, but not for perceived stress, mastery, or self-esteem. Thus, only partial support for Hypothesis 1 was found (which predicted significant sexual identity differences for each of these dimensions). Regarding Hypothesis 2, we detected significant sexual identity effects in the proportion of peers in the inner circle, $F(2, 115) = 7.52$, $p < .01$; number of friends lost (analyses of this variable have a reduced sample size because 3 heterosexual respondents and 4 sexual-minority respondents left this question blank), $F(1, 109) = 3.89$, $p = .05$; worries or fears over losing friends, $F(1, 117) = 18.8$, $p < .001$; fears of not finding desired romantic relationships, $F(1, 118) = 3.93$, $p < .05$; and perceived control in romantic relationships, $F(1, 118) = 8.31$, $p < .01$. Main effects of sexual identity were not found for total peer network size, number of inner-circle friendships, connectedness to friends, and number of romantic relationships (note that not all of the sexual-minority youths' romantic relationships were with same-sex partners; approximately 27% of male sexual-minority youths' prior relationships were with female partners, and 58% of female sexual-minority youths' prior relationships were with male partners). Thus, only partial support was found for Hypothesis 2.

Moderating Effects of Age and Outness

Although there was not a significant main effect of sexual identity on peer network size, there was a trend-level difference between sexual-minority and heterosexual youths on this variable, $F(1, 115) = 2.80$, $p = .09$, and thus we moved forward in testing the hypothesized interaction between age and sexual identity for peer network size. Rather than the predicted Age × Sexual Identity effect, we found an unexpected three-way interaction among sexual identity, age, and gender, $F(1, 122) = 7.1$, $p < .01$.

[3] Following Aiken and West (1991), when variables are coded to have meaningful zero points, the lower order effects of variables involved in higher order interactions are interpretable as effects at the zero point of the interacting variable. Thus, because age was centered in the present analyses, the lower order coefficient for sexual identity in models containing Sexual Identity × Age interactions is interpretable as the effect of sexual identity at the average age.

Follow-up comparisons stratified by gender and age (under 18 vs. 18 and older)[4] found that, consistent with our expectations, only younger, male sexual-minority youths had significantly smaller peer networks than their heterosexual counterparts ($t = -3.31$, $p < .02$). This difference was not significant among older youths (regardless of gender) or among younger female youths. Note that the proportion of females versus males in the older and younger groups did not itself vary as a function of sexual identity. Among sexual minorities, 14 of the 27 respondents in the younger group were female (51%), and 18 of the 33 respondents in the older group were female (55%). Among heterosexuals, 15 of the 27 youths in the younger group were female (55%), and 20 of the 38 youths in the older group were female (53%).

There was also a significant interaction between age and sexual identity regarding the proportion of friendships that were inner-circle ties, $F(1, 115) = 6.47$, $p = .01$. As expected, sexual-minority respondents under 18 had smaller proportions of inner-circle friendships than did heterosexuals, albeit only at the trend level ($t = 2.0$, $p = .06$). Unexpectedly, however, older sexual-minority youths actually had greater proportions of inner-circle friendships than did heterosexuals ($t = 2.7$, $p = .008$). Age also moderated the sexual-identity difference in friendship loss, $F(1, 115) = F(1, 115) = 6.8$, $p = .01$. Follow-up comparisons found that only sexual minorities under 18 reported more friendship loss than did heterosexuals ($t = -2.57$, Bonferroni-corrected $p < .01$). Contrary to prediction, age did not moderate sexual identity differences in friendship fears, but youths' self-perceived SES was found to moderate this effect, $F(1, 107) = 8.2$, $p < .01$. Specifically, self-perceived SES was negatively correlated with friendship fears among heterosexual youths ($r = -.24$, $p = .05$), but this was not the case among sexual minorities ($r = .12$, *ns*). There were no Age $\times$ Sexual Identity interactions regarding romantic relationship factors.

To examine the potential moderating effect of outness, we divided the sample into three groups: heterosexuals, sexual minorities who reported that at least five of their heterosexual friends knew about their sexual identity (denoted out youths), and sexual minorities who reported that less than five of their heterosexual friends knew about their sexual identity (denoted closeted youths). Pairwise comparisons were planned to test (1) whether the relationship and mental well-being characteristics that

[4] The median age in our sample was 18, but using a standard median split would have classed 18-year-olds with their younger counterparts. Given that 18 marks a theoretically relevant social boundary (legal adulthood, entry into college for some youths, and often notable changes in parental monitoring), we elected to group the sample into subsamples of under 18 and 18 and older for all age-stratified follow-up analyses.

differed between heterosexuals and sexual minorities also differed within sexual minorities as a function of outness, and (2) whether out sexual-minority youths were more similar to heterosexuals on these dimensions. Controlling for age and gender, there was a significant effect of outness on the size of youths' peer networks, $F(2, 117) = 3.56$, $p = .03$; the proportion of youths' inner-circle peer relationships, $F(2, 117) = 7.67$, $p < .001$; friendship loss, $F(2, 111) = 3.17$, $p < .04$; and friendship fears, $F(2, 117) = 13.83$, $p < .001$. Yet the pattern that emerged from the planned pairwise comparisons was not always consistent. For peer network size, as expected, both heterosexual youths and out sexual-minority youths had larger networks than did closeted youths (the latter effect was only at the trend level; $p_{\text{heterosexual vs. closeted}} < .01$, $p_{\text{out vs. closeted}} < .07$), but heterosexual and out youths did not differ. Yet with regard to inner-circle relationships, friendship loss, and friendship fears, it was the out youths who proved distinctive. Specifically, they had a greater proportion of inner-circle friendships, greater friendship loss, and greater friendship fears than both heterosexuals and closeted youths (all ps $< .05$), whereas closeted and heterosexual youths did not differ. Contrary to prediction, outness did not moderate the sexual-identity differences for fears or perceptions of control regarding romantic relationships. Thus, only partial support was found for Hypothesis 3.

Relationship Factors as Potential Mediators of Sexual-Identity Differences in Mental Well-Being

To test whether sexual-minority youths' relationship experiences and perceptions mediated the association between sexual identity and negative affect, the experiences and perceptions that were significantly associated both with sexual identity and negative affect (friendship loss, friendship worries, romantic fears, and romantic control) were added to the regression of negative affect on sexual identity, age, gender, and family structure, and the change in the sexual identity coefficient was examined. Table 4 presents the results of both regressions. As shown in the table, once the set of relationship variables was added to the regression equation, there was no longer a significant effect of sexual identity. In contrast, all of the relationship variables had significant unique associations with negative affect. Altogether, the set of relationship variables explained an additional 33% of variance in negative affect, $F(\Delta df = 4) = 16.71$, $p < .0001$. These results confirm the mediation effect predicted by Hypothesis 4.

To summarize, support for the predicted associations was generally modest and partial. Regarding the sexual identity differences in mental

TABLE 4
Result of Hierarchical Regressions Predicting Negative Affect From Age, Gender, Sexual Identity, Family Structure, Self-Perceived SES, and Relationship Characteristics

Step	*Variables Added*	$\beta_{Step\ 1}$	$\beta_{Step\ 2}$
1	Age	−.04	−.04
	Sex	−.06	−.06
	Family structure	−.14	−.14*
	Socioeconomic status	−.10	−.01
	Sexual identity	.16*	.02
Step 1 Model: $F(5, 110) = 3.43$, $R^2 = .14$, $p < .006$			
2	Perceived control in romantic relationships (RR)		−.18**
	Fears of not finding desired type of RR		.17***
	Number of friends lost		.13*
	Worry or fear over losing friends		.13*
Step 2 Model: $F(9, 106) = 10.43$, $R^2 = .68$, $p < .00001$			

*$p < .05$; **$p < .01$; ***$p < .001$.

health predicted in Hypothesis 1, differences were only found for dimensions related to negative affectivity. Also, only three of the seven predicted social network differences predicted in Hypothesis 2 were confirmed. Also, the size of these differences was relatively small (as shown by the effect sizes presented in Table 2). Regarding Hypothesis 3, age and outness moderated some of the friendship factors but none of the romantic relationship factors. The mediating effect of Hypothesis 4, however, was clearly confirmed.

DISCUSSION

Given that much prior research has focused on the most dire psychological and experiential differences between sexual-minority and heterosexual youths, such as suicidality and verbal and physical victimization (D'Augelli, 1992; Savin-Williams, 1994, 2001), perhaps one of the most important findings of the current study is that sexual-minority youths were not uniformly worse off than their heterosexual counterparts. Although they had higher depression, anxiety, and physical symptomology, they did not have higher perceived stress, lower feelings of mastery, or lower self-esteem. Although they had smaller peer networks, more friendship loss, and more fears and worries about peer relationships, they did not report less connectedness to their friends, less perceived control over their friendships, or fewer romantic relationships. Collectively, these findings underscore the importance of attending to the multiple processes and mechanisms

through which a youth's sexual-minority status influences his or her social relationships and well-being.

Age and Outness Moderate Friendship but not Romantic Experiences

Another notable finding of the study is that age and outness moderate the aforementioned sexual-identity differences. Specifically, we found that younger (i.e., under 18) sexual-minority adolescents reported more friendship loss and younger male sexual-minority adolescents had smaller peer networks than did their heterosexual counterparts. These differences were not observed among older adolescents. Younger sexual-minority youths also had a smaller proportion of inner-circle friends in their peer networks than did heterosexuals, whereas older sexual-minority youths had a significantly greater proportion of inner-circle friendships than did heterosexuals. The social and psychological mechanisms underlying these findings deserve future investigation. For example, one possibility is that sexual minorities are more selective with regard to their friendships at earlier ages than are heterosexuals, owing to a heightened awareness of—and direct experience with—the possibility of social rejection and friendship dissolution. This possibility is consistent with the fact that regardless of age, sexual-minority youths in the present study reported greater worries and fears about friendship loss than did heterosexuals. As youths mature, such concerns might lead them to place increasing emphasis on close rather than casual friendships. Of course, because the present study was cross-sectional rather than longitudinal, we cannot interpret the age effects as maturational processes. Rather, some of the age differences observed in this study might reflect the fact that sexual minorities who express their same-sex sexuality in middle adolescence are appreciably different from those who do so later. Future research must employ longitudinal observation to address this possibility. However, we did not find that respondents' age was significantly associated with the demographic variables that differentiated between sexual-minority and heterosexual youths (self-perceived SES and family structure), suggesting that the age effects do not simply represent cohort differences between these groups.

Although age moderated sexual-identity differences in friendship experiences, this was not the case in romantic relationships. Furthermore, we did not find overall sexual-identity differences in rates of romantic involvement. This might be attributable to the fact that the youths in the present sample had high rates of participation in sexual-minority activities, which are common sites for meeting and dating same-sex partners (Diamond, 2003). Also, consistent with prior research (Russell & Consolacion,

2003), the sexual-minority youths in the present study reported considerable experience with other-sex as well as same-sex relationships. Yet despite their high rates of romantic experience, the sexual-minority youths in the present study also expressed worries about their romantic lives. They were less likely than heterosexuals to feel they had control over their romantic relationships and more likely to fear never finding the kind of relationship they wanted. The degree to which these perceptions are based on stereotypes about—versus actual experiences in—same-sex relationships is not known. Previous research (Diamond & Dubé, 2002) suggests that male sexual-minority youths, in particular, may face obstacles in developing highly intimate same-sex romances during the adolescent years, and thus future research should systematically examine the sources and consequences of youths' negative romantic expectations.

The degree to which a youth was open about his or her sexuality was another significant moderator of relationship experiences and expectations. However, the pattern of results suggests that outness is neither uniformly positive nor uniformly negative. Youths who had disclosed their sexual orientation to multiple heterosexual peers had larger peer networks and a greater proportion of inner-circle peer relationships than did those who had not; however, they also had significantly greater friendship loss and friendship fears. Clearly, openness about one's sexuality during the adolescent years has multiple antecedants and consequences. On the one hand, youths that are more out—especially to heterosexual peers—might be better able to identify peers who are authentically supportive and nonstigmatizing, leading them to develop larger peer networks and a greater number of close friendships than more closeted youths. At the same time, disclosure of a sexual-minority identity invariably carries risks of friendship loss. Although the current study cannot reveal whether sexual-minority youths' friendship losses were caused by their sexual orientation, it bears noting that one previous study found that nearly half of gay male youths lost at least one friend upon disclosure of their sexual orientation (D'Augelli & Hershberger, 1993).

Relationship Experiences Mediate Sexual-Identity Differences in Well-Being

The present study found that, as expected, sexual-identity differences in negative affectivity (i.e., depression, anxiety, physical symptomology) were mediated by sexual-identity differences in youths' relationship experiences and expectations. This is particularly notable given that prior research on sexual-minority youths has devoted so little attention to their

peer relationships. An important question for future longitudinal research is whether relationship experiences and concerns engender or stem from heightened negative affect. Much prior research suggests, for example, that romantic problems can exacerbate negative emotions (Larson et al., 1999), and yet alternatively, high levels of negative affect might simply have some of their strongest manifestations in relationship worries because of the heightened salience of peer intimacy during the adolescent years (Buhrmester, 1996; Connolly & Johnson, 1996; Hazan & Zeifman, 1994; Savin-Williams & Berndt, 1990). Either way, this study's findings demonstrate the need for future social-developmental research on heterosexual and sexual-minority youths' romantic experiences and expectations.

Additionally, these findings demonstrate that instead of using sexual identity as a proxy for a youth's risk status, we need to attend to adolescents' specific psychosocial strengths and weaknesses over time. After all, friendship and romanatic concerns are certainly not exclusive to sexual-minority youths. For example, previous research has found that most adolescents begin ruminating about romantic relationships long before they actually begin participating in such relationships, and negative worries and insecurities about close relationships are common (Brooks-Gunn, Graber, & Paikoff, 1994). Clearly, future research should more closely investigate the multiple factors that shape sexual-minority and heterosexual youths' social development, and the specific psychological and interpersonal processes through which adolescent friendships and romantic experiences relate to overall well-being.

Limitations of the Study

As with any convenience sample, the generalizability of these findings remains circumscribed. Future research should seek to replicate the present findings with more diverse samples of youths drawn from different geographic regions and using different recruitment strategies. In particular, it is important to investigate the relationship patterns of youths that are less open about their sexuality and who have lower rates of participation in sexual-minority communities. The sexual minorities in the current research had high rates of participation in sexual-minority activities, were fairly open about their sexuality, and had high numbers of sexual-minority friends. This may provide a partial explanation for their high feelings of mastery and self-esteem, given that previous research has found that social support from sexual-minority peers is associated with greater feelings of self-efficacy and self-esteem among sexual-minority youths (Anderson, 1987). Given that the current study found that outness

moderated sexual-minority youths' relationship experiences and expectations, it is critically important to investigate the social development of youths that are more secretive about their sexuality.

Another concern with respect to the current study is comparability between the heterosexual and sexual-minority respondents, given the different recruitment strategies for these populations. This has been a long-standing issue for research of this nature (see discussion in Diamond & Dubé, 2002) given the difficulty—if not impossibility—of matching sexual-minority and heterosexual samples on characteristics such as involvement in potentially stigmatizing community activities. Currently, the most commonly adopted approach is to recruit heterosexual comparison samples from the same social and geographic context as the sexual-minority sample, provide detailed information on the social and demographic characteristics of the two groups, and include any relevant social and demographic factors in statistical analyses (Remafedi, French, Story, Resnick, & Blum, 1998). This is the approach we adopted. We did, in fact, detect demographic differences between the sexual-minority and heterosexual groups (as shown in Table 1): Specifically, the sexual-minority respondents tended to come from families with only one parent in the home and to describe their families as having lower SES.

The reason for this association is not known, yet it underscores the need for future research on the ways in which sexual-minority youths' SES and family structures may interact with their sexual-minority status to shape their social-developmental trajectories. Although the heterosexual respondents might not be maximally similar to the sexual-minority sample, the way they were recruited makes them a meaningful group of typical youths against which to compare the experiences of sexual minorities (although recall that the response rate for the heterosexual college-aged participants—50%—was low; as noted earlier, this likely stems from the fact that undergraduates at this college campus face numerous demands for research participation, and we did not conduct multiple follow-up solicitations among those who declined to participate). A priority for future research, then, is not only to determine whether differences between heterosexual and sexual-minority youths are robust across samples drawn from different communities with different recruitment methods but also to determine which differences appear truly attributable to a youth's sexual-minority status versus other dispositional or situational factors. This study is by no means the final word on these questions, but it helps identity critical areas for future research.

An additional limitation regarding measurement is the fact that all of the data were collected through self-report, and some of the variables were assessed with only one or two items. Future research should attempt to

develop better, more differentiated measures of youths' relationship cognitions and should triangulate youths' self-reports with information provided by youths' relationship partners (friends, family, and romantic partners). Finally, because the study was cross-sectional, it is impossible to determine the cause or direction of the significant associations detected, or the mechanisms underlying such associations. Despite these limitations, however, the present study makes a novel and important contribution to the social-developmental literature by providing a much-needed empirical foundation for the future generation and testing of prospective, process-oriented hypotheses about sexual-minority and heterosexual youths' interpersonal experiences.

Conclusion

Developmental psychologists have made great strides over the past 20 years in investigating and raising awareness about the unique psychosocial experiences of sexual-minority adolescents. Although much prior research has focused on negative experiences such as stigmatization and peer victimization, we must also attend to more normative, mundane aspects of daily adolescent life, such as youths' feelings and experiences in peer relationships. The current research demonstrates that such feelings and experiences are critical to understanding differences between sexual-minority and heterosexual youths' psychosocial well-being. Future research should build on these findings by further investigating how intrapsychic and interpersonal factors interact to shape sexual-minority and heterosexual youths' social-developmental trajectories from adolescence to young adulthood.

ACKNOWLEDGMENTS

This work was supported by a Wayne F. Placek Small Grant from the American Psychological Foundation, awarded to the first author. The author wishes to acknowledge the participation and assistance of the recruitment sites.

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