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Young Parents' Relationship Characteristics, Shared Sexual Behaviors, Perception of Partner Risks, and Dyadic Influences

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Abstract

Rising rates of heterosexually-transmitted HIV among youth and young adults, particularly from ethnic minorities, create an urgent need to understand risk factors and perceptions of risk within the context of couple relationships. This study examined reports of young mothers and fathers (predominantly Latino) about background characteristics, relationship quality and length, HIV-related risk factors, and perceptions of partners' behaviors and personal history. Higher concordance was found for relationship characteristics and partners' personal history (e.g., incarceration) than on shared sexual behaviors. Most males and females stated that they were monogamous; however, those whose partners reported concurrency were unaware of this. Many were unaware of their partners' HIV testing status. Relationship quality was higher when females accurately perceived their partners' self-reported HIV-related risk behaviors. Length of the relationship did not influence concordance. Findings support the need for HIV prevention programs to promote open discussion about condom use and HIV testing within sexual partnerships.

The growing proportion of newly diagnosed human immunodeficiency virus (HIV) infections among adolescents and young adults engaging in heterosexual relations indicates that, despite widespread prevention efforts, this group faces continuing risk. African Americans, representing 16% of U.S. teenagers, accounted for 69% of new AIDS cases reported among 13-to 19-year-olds in 2005. For Latinos, although new AIDS cases in the same age group reflected their proportion of the population (17%), young adults (ages 20-24) accounted for 22% of new AIDS cases but only 18% of the population (Kaiser Family Foundation, 2008). A multitude of complex factors is believed to contribute to the rising rates of infection. One important issue is communication between intimate partners about their personal histories, including past risky behaviors. Another is current engagement

in risky behaviors within and outside of the relationship. Research findings show that couple communication and accurate assessment of partners' risk behaviors can influence sexual decision-making to avoid risky partners, or to adopt protective strategies (e.g., consistent and correct condom use) to reduce risk of sexually transmitted infections (STIs), including HIV (Rojas-Guyler, Ellis, & Sanders, 2005; Stoner et al., 2003).

Unfortunately, little is known concerning the accuracy of adolescent couples' perceptions about each other's past histories of risky behaviors and concurrent relations, or the agreement between partners in reporting shared sexual behaviors, particularly among youth of color. Further, the influence of relationship quality on interpartner concordance of adolescents has not been investigated.

There is a scarcity of research on adolescent parents in couple relationships, despite evidence that young mothers and fathers represent a subset of youth at increased risk for HIV because of their sexual behaviors, drug/alcohol use, and needle sharing for body piercing or tattoos (Koniak-Griffin & Brecht, 1997; Koniak-Griffin et al., 2003; Lesser, Tello, Koniak-Griffin, Kappos, & Rhys, 2001). A history of incarceration is frequently reported among young fathers (Lesser et al., 2001). HIV seroprevalence is substantially higher among people with a history of incarceration than among those without such a history (CDC, 2006). The investigation reported here examines what adolescent parents report about shared sexual behaviors, relationship characteristics, and their beliefs about each other in relation to their self-report about HIV risk-related factors (i.e., concurrent sexual relations, history of substance use and incarceration, and HIV testing). The data were collected as part of the baseline assessments conducted in an HIV prevention study involving a sample of young parents.

Three unique aspects of this study are the focus on hard-to-reach, predominantly Latino youth (14-25 years of age), the inclusion of young parents only, and the examination of the influence of dyadic factors on perceptions of partners' overall HIV-related risk factors. Individuals' perceptions about their partners' risky behaviors (outside of the relationship) and their self-reports about shared sexual behaviors (e.g., sexual intercourse and condom use) have been examined within the context of couple relationships of men having sex with men (Carballo-Diequez, Remien, Dolezal, & Wagner, 1999; Coates et al., 1988; Seage, Mayer, Horsburgh, Cai, & Lamb, 1992) and HIV discordant heterosexual adult couples (Bennetts et al., 1999; de Boer et al., 1998; Padian, 1990). A limited number of studies have involved heterosexual adult couples recruited from sexually transmitted infection (STI) and family planning clinics (Drumright, Gorbach, & Holmes, 2004; Ellen, Vittinghoff, Bolan, Boyer, & Padian, 1998; Ellish, Weisman, Celentano & Zenilman, 1996; Stoner et al., 2003; Upchurch et al., 1991). The extent of agreement between adult partners on questions related to shared sexual behaviors and condom use has been found to vary with sample size and composition, nature of questions asked, and analysis techniques (Upchurch, Lillard, Aneshensel, & Fang, 2002). Concordance about condom use has been observed to be poorer among adult couples of lower socioeconomic status (SES) and for younger couples (Padian, Aral, Vranizan, & Bolan, 1995).

A small number of investigations have examined interpartner concordance for frequency of sex and past condom use and perceptions about each other's HIV-related risk behaviors in samples of adolescents and young adults. For example, in a study involving Black and Hispanic heterosexual young adults, Harvey and associates (Harvey, Bird, Henderson, Beckmann & Huszti, 2004) found substantial agreement about condom use in the last 90 days and during the most recent sex episodes. There was slightly less agreement that condoms were used than that they were not used during the most recent vaginal sex episode based upon conditional probability indices. Couples were highly concordant about

relationship characteristics. Dating college students of diverse ethnic backgrounds also have been found to have moderate to high concordance for sexual behaviors (Seal, 1997). However, only fair to moderate concordance on reports of concurrent sexual behaviors has been found across studies. Among African American adolescents who perceived their sexual partner to be monogamous, 37% of the women's male partners and 16% of the men's female partners reported having other partners (Lenoir, Adler, Borzekowski, Tschann, & Ellen, 2006). Those in partnerships for more than 6 months and characterizing their relationship as emotionally close were almost twice as likely to agree on sex-partner concurrency compared with couples who were less emotionally close. Other researchers have similarly found higher agreement between young adult men's perceptions and their female partners' reports of having sex with someone else, than between women's perceptions and their male partners' reports (Harvey et al., 2004). Low rates of agreement for partners having other partners ($\kappa = 0.29$) also have been reported for heterosexual patients with a diagnosed STI (Stoner et al., 2003).

Other potential HIV risk-related behaviors, such as substance use, have not been examined in studies comparing adolescents' perceptions of their partners' risks with those same partners' self-reported risks. However, a moderate to substantial degree of concordance has been found between African American and white heterosexual adults' perceptions about their sex partners' risk behaviors and their main sex partners' reported risk (Ellen et al., 1998). Behaviors examined included use of "crack" cocaine in the last 3 months and lifetime injection drug use. Stoner and colleagues (2003) found that agreement was moderate for injection drug use by the partner, partner history of incarceration, and condom use within the partnership. In general, age, race/ethnicity, and gender did not affect partner agreement. In contrast, Witte and associates (Witte, El-Bassel, Gilbert, Wu, & Chang, 2007) found poor to fair agreement on reports of drug and alcohol use between adult partners of African American and Latino backgrounds. Couples in which the female partner had lower relationship satisfaction and those in longer relationships were more likely to have discordant reports on female partners' use of drugs. Higher discordant reports on male partners' use of drugs were not found among couples in which the male partner reported lower relationship satisfaction.

In summary, studies examining sexual behaviors within relationships and perceptions of partner risks have been conducted with largely adult samples. Few studies have specifically targeted youth of ethnic minority background, and adolescent parents have not been investigated. In general, greater concordance has been found between partners' reports of shared sexual behaviors than their reports of risky behaviors outside the relationship. Dyadic influences on adolescents' perceptions of their partners' HIV-risk-related behaviors have not been examined. Thus, the major purposes of this study were to determine predominantly Latino young mothers' and fathers' 1) concordance in reports about relationship characteristics and shared sexual behaviors; and 2) perceptions about their partners' HIV-related risk factors (e.g., concurrent sexual relations, methamphetamine use) in comparison to actual reported behaviors. The study also examined differences in relationship quality and length between concordant and discordant couples.

Method

Participants

Participants for this investigation were drawn from a randomized clinical trial evaluating the effects of a couple-focused HIV prevention program ("Respecting and Protecting Our Relationships: HIV Prevention for Teen Fathers and Mothers" [RPOR]) conducted in Los Angeles County. The six-session (12-hour) couple-focused HIV prevention curriculum for young parents emphasized protecting the family, to promote safer sexual behaviors. Details

of the intervention have been described previously (Lesser, Koniak-Griffin, González-Figueroa, Huang, & Cumberland, 2007). One hundred sixty-eight heterosexual couples ($N = 336$ individuals) participated in this study. All participants were between 14 and 25 years old at intake and co-parenting a child at least 3 months old, spoke English and/or Spanish, and had been in the current relationship at least 3 months. The broad age range for inclusion reflects current beliefs that those 18-25 years of age have many developmental and health needs similar to younger adolescents (Family Health International, 2000). Because pregnancy has been identified as an important predictor of unprotected sex, based on the absence of a need to prevent conception (Bralock & Koniak-Griffin, 2007; Koniak-Griffin, Lesser, Uman, & Nyamathi, 2003), young women who were pregnant at the time of recruitment were excluded from the sample. A variety of community settings (e.g., Women, Infant and Children [WIC] centers, alternative schools with pregnant minor/parenting programs, and community-based service organizations) served as recruitment sites.

Procedures

All recruitment procedures and forms used to obtain written informed consent from participants were approved by the university's institutional review board. Parental consent for participants under age 18 was waived, as participation in the study entailed no more than minimal risk, and obtaining parental consent could have presented undue hardship to some of the young parents for a variety of reasons; e.g., lack of contact with parents and potential family conflicts. Nevertheless, recruiters encouraged the young parents to inform their parents whenever possible about their involvement in the project, and a parental information form (approved by the IRB) was made available to all potential participants. Initial recruitment efforts were directed toward adolescent mothers. After eligibility of the young woman was confirmed, and she verbally agreed to participate and had obtained the verbal consent of her partner to be contacted, the recruiter called the potential male partner and implemented the same screening procedure. Written informed consent was obtained separately from each participant.

Participants completed an instrument packet, in English or Spanish, at baseline prior to randomization and initiation of the intervention. The packet was read aloud to small groups of young women and young men separately, by specially trained data collectors. Each participant received \$25 for completion of the baseline questionnaire.

Measures

The instrument packet used for this analysis contained questions on demographic/background characteristics (e.g., age, ethnicity, gender, household composition, education, number of children, past HIV testing), history of incarceration and/or gang membership, and lifetime and current sexual behaviors and substance use. The short form of the Marín and Marín acculturation measure (4-point Likert-type scale) was administered, depicting language use and preference (Marín & Vanoss-Marín, 1991). Physical abuse history was measured by a yes/no response to the item: "Have you ever been physically abused by an adult (that is, where an adult caused you to have a scar, black and blue mark, welt, bleeding, or a broken bone)?" Sexual abuse history was measured by a yes/no response to the item: "Have you ever been sexually abused by someone (that is, someone in your family or someone else did sexual things to you that you did not want or forced you to touch them sexually)?"

A series of partner-referent items enabled young mothers and fathers to describe their perceptions about their partners' behaviors. They responded (Yes/No/Don't Know) to questions such as "Has your partner had other sexual partners in the last 3 months; used

cocaine or crack cocaine; used speed or methamphetamines, ever used injection drugs; ever been in jail or juvenile hall; ever belonged to a gang; ever had an HIV test.

The sexual behavior items required participants to specify the number of episodes of vaginal, oral, and anal sex during the past 3 months for each partner and the number of times these episodes occurred with and without a condom. Participants also were asked whether they used a condom the last time they had sex.

Several steps were taken to maximize reliability and validity of the self-report measures on sexual behavior and substance use as recommended by Catania, Gibson, Chitwood, and Coates (1990). Standard and familiar sex terms were used, with clear definitions provided. Participants were asked to report sexual behaviors over a relatively short period. This approach is commonly used to increase the validity of self-reported sexual data (Peragallo et al., 2005; Villaruel, Jemmott, & Jemmott, 2006). The data collectors assisted participants in recalling behavior by providing anchor dates as appropriate for the items; for example, school breaks and holidays that occurred during the recall period were identified.

Relationship quality was measured by the 32-item Dyadic Adjustment Scale (DAS), consisting of four subscales: satisfaction, consensus, cohesion, and affectional expression. Participants responded on a 6-point Likert-type scale as to how much they agreed or disagreed with their partners when discussing topics such as making major decisions, leisure time interests and activities, and showing affection. Higher T-scores on the DAS represent better dyadic adjustment. Original testing supported the construct validity and internal consistency reliability of the DAS total scale and its subscales (Spanier, 1976). Because the internal consistency of the entire measure in our sample was higher than for the subscales, we used the overall score (Cronbach's $\alpha = 0.89$ for males, 0.90 for females, and 0.89 when combining males and females together). Other researchers have similarly used the total score as the sole measure for individuals' perception of relationship quality (Bonds & Gondoli, 2007; King & Arnett, 2005; McKay, Maclean, & Bourgeois, 2002) and to create an average couple score (Crane & Middleton, 2000). Findings from a meta-analysis provide support for the psychometric characteristics of the DAS and also demonstrate that reliability estimates of the total and subscale scores do not differ by gender, marital status, or ethnicity (Graham, Liu, Yenling, & Jeziorski, 2006). The DAS has been administered to Latinos of varying ages (Soloway, Soloway, Kim, & Kava, 2005; Treviño, Wooten, & Scott, 2007), and the reliability and validity of the Spanish version have been established (Youngblut, Brooten, & Menzies, 2006).

Prior to use in this study, the instrument packet was reviewed for clarity, readability, and cultural appropriateness in two gender-separated (male and female) Latino adolescent focus groups. Participants ($n = 10$) agreed that the items could be easily followed as an interviewer read them aloud. Next, the questions were administered in a feasibility study testing the couple-focused HIV prevention program (Koniak-Griffin et al., in press).

Analysis

Statistical analyses were conducted using SAS 9.1.3. Concordance in responses of female and male partners was assessed using kappa (κ) statistic and conditional probability indices. Kappa is a commonly used measure of agreement adjusted by the expected agreement by chance (Cohen, 1960). The maximum value of kappa is 1, which represents perfect agreement; kappa is 0 if there is only chance agreement. Negative kappa values indicate that the observed agreement is less than the expected agreement, representing disagreement adjusted by chance. By convention, values of kappa ranging from 0-.20 indicate poor agreement; 0.21 to 0.40, fair; 0.41 to 0.60, moderate; 0.61 to .80, substantial; and 0.81 or

above, almost perfect agreement (Fleiss, 1981; Landis & Koch, 1977; Posner, Sampson, Caplan, Ward, & Cheney, 1990).

Because kappa values may be affected by prevalence of the condition being assessed when marginal frequencies are very asymmetric or highly symmetrically unbalanced, concordance between partners was also calculated using positive and negative conditional probability indices. The positive conditional probability index (CP^+) represents the probability of one partner's responding positively if the other partner in the couple has responded positively; it is calculated by dividing the number of agreed positive responses between partners by the average number of positive responses in the sample (Fleiss, 1981; Ochs & Binik, 1999). The negative conditional probability index (CP^-) represents the probability of one partner's responding negatively if the other partner in the couple has responded negatively; it is determined by dividing the number of agreed negative responses by the average number of negative responses in the sample. Participants responding "don't know" about their own or their partners' behaviors were excluded from the calculations of kappa and the conditional probability indices. Thus, these measures must be interpreted conditionally on such a response. This methodology is consistent with other studies (Ellen et al., 1998; Lenoir, et al, 2006; Nelson, et al., 2007) and allows comparative interpretations of the measure across studies. However, an alternative view of these data might suggest that unconditional probability of agreement is also a valid, though different, measure of agreement between couples. This measure might be of particular interest when considering sexual risk-taking, because being unaware of a partner's risk behaviors is itself a risk factor. To this end, we have included two measures of overall agreement in addition to the kappa scores and the CP^+ / CP^- measures. The different interpretations of these percentages (unconditional versus conditional agreement) provide two important measures of couple concordance.

To examine whether agreement on important sexual risk measures was associated with measures of relationship quality and length, the sample was stratified according to the unconditional measures of concordance on condom use at last sexual episode and on five HIV-related risk factors. For each case, two strata were formed, based on concordance status where "discordant" included the "don't know" responses. A comparison was then made using a t-test of the couple-average DAS T-scores and the couple-average relationship lengths for the two groups.

For continuous and normally distributed data (e.g., length of relationship), Pearson's correlation coefficient (r) was calculated to estimate the degree of association between couples' responses. For continuous but skewed data (e.g., number of episodes of unprotected sex), Spearman's rank correlation coefficient was used to estimate the degree of association. Values from 0.40 to 0.70 indicate moderate agreement (Williams, 1992). An alpha level below .05 was used to establish significance for all statistical tests.

Results

A total of 168 couples (336 females and males) were enrolled in the study (Table 1). Participants were predominantly Latino (86% of females, 82% of males), ranging in age from 14 to 25 years (female mean = 18.54, SD = 1.67; male mean = 20.35, SD = 2.19). The average years of education were 11.2 for females and 11.4 for males (i.e., less than required for high school graduation). Level of acculturation was fairly high for all participants combined (mean = 3.55, SD = 0.98). Although females were younger than males on average, their mean acculturation level (mean = 3.65, SD = 0.99) was slightly higher than that of the males (mean = 3.44, SD = 0.94). The mean reported length of relationship was similar for males (35.6 months) and females (34.7 months). The number of participants reporting a history of STIs was low (14.9% for females and 8.9% for males), whereas reports of lifetime

histories of abuse were high. A history of sexual abuse was more commonly reported among females (34.5%) than males (12.5%). Very few young women ($n = 6$) and men ($n = 8$) reported having sexual partners outside of their primary relationship; this difference in reports of concurrency was not significant.

Concordance on Relationship Characteristics and Sexual Behaviors

Table 2 presents correlation coefficients for relationship characteristics (duration, shared sexual behaviors) as measures of concordance between partner responses. There is a high correlation between partners on reported length of their relationship ($r = 0.893, p < 0.0001$). The agreement about shared sexual behaviors is moderate, with $r = 0.460$ for number of unprotected vaginal sex episodes and $r = 0.545$ for number of protected vaginal sex episodes in the past 3 months. The females tended to report lower frequencies of shared sexual episodes than their male partners, but the difference was not statistically significant.

Table 3 describes the concordance between adolescent partners about cohabitation, condom use, perceptions of partners' HIV-related risk factors versus partners' self-reported risks (concurrent relationships, methamphetamine use, history of incarceration, gang membership), and past HIV testing. Two measures of overall concordance are included in Table 3. The first column displays the percent of agreement among all couples and the second column shows the percent of agreement among couples responding yes/no to the item. Both the conditional probability (CP^+ and CP^-) and the kappa are reported. When prevalence rates are extremely low, the negative or exceptionally low kappa values reported for variables in Table 3 may not necessarily reflect low rates of overall agreement. Couples' concordance in these cases is better understood by individual values of CP^+ and CP^- .

High concordance is observed for the status of living together ($kappa = 0.793$). Most young mothers and fathers agreed about cohabitation ($CP^+ = 0.913$). Couples had moderate concordance on their reports of condom use during their last sexual episode ($kappa = 0.500$). High agreement between partners was found for reports about lack of condom use ($CP^- = 0.827$). The large majority of female (76%) and male (74%) perceptions about concurrency were confirmed by their partner. These concordance rates, based upon inclusion of participants responding "do not know," are necessarily lower than the percents calculated from those with yes/no responses only, but differs substantially only when there are significant numbers of "don't know" responses. Nearly all of the females and males believing that they were in a monogamous relationship were accurate in their perceptions according to their partners' reports ($CP^- = 0.973$ and $CP^- = 0.969$, respectively). The exception to this was for those few whose partners did report concurrent relations; all young women and men with partners reporting extradyadic relations inaccurately perceived their relationship as monogamous.

Perceptions Versus Partners' Self-reported Substance Use, Other Risks and HIV Testing

Levels of concordance varied among perceptions and self-reported partner behaviors, depending upon the variable being examined. For social-contextual background factors such as history of incarceration, concordance was moderately high for both women ($kappa = .699$) and men ($kappa = .730$), as were conditional probability indexes. Young women's perceptions about their partners' history of gang membership also were moderately high ($kappa = .689$), with accuracy of perceptions being higher when involvement was not reported by male partners. Prevalence rates for use of methamphetamines in the past month were quite low, particularly for young women. Although the kappa values were moderate for agreement between perceptions of partners' risky behavior and actual methamphetamine use for both genders, the high negative conditional probability index shows that concordance was higher when the behavior was absent. Kappa values for HIV testing were fair. Testing

was more frequently reported among young mothers (74%) than fathers (49%). Nearly 25% of women stated they had not had an HIV test. Perceptions of young mothers and fathers about HIV testing of their mates were less likely to be accurate than for other HIV-related factors. Several participants reported not knowing whether their partners had had an HIV test (29% of women; 27% of men). Both young mothers and fathers were more likely to agree if their partner had had an HIV test than if he/she had not had an HIV test.

Concordance Impact on Relationship Quality and Length

No significant differences were found in relationship quality as measured by DAS T-scores between couples who were concordant on reports about condom use during the last sexual episode ($n = 130$) and those who were discordant ($n = 38$), $t(166) = -.48, p = .63$. Similarly, the length of relationship did not significantly differ between concordant and discordant couples, $t(166) = 1.57, p = .12$. Table 4 presents comparisons of DAS T-scores and relationship length between couples concurring about HIV-related risk factors (concurrent sexual partner[s], methamphetamine use in past month, incarceration, ever in gang, absence of HIV testing) and those not agreeing. The couple's relationship quality was significantly higher for young women who accurately perceived their partners' HIV-related risk factors than for those whose perceptions were discordant with their partners' behaviors, $t(166) = 2.24, p = .03$. Over 75% of the women's perceptions did not concur with their partners' reported behaviors, largely due to the fact that we were asking for complete agreement on five separate risk factors and several participants were unaware of their partners' HIV status. DAS T-scores were not significantly different for young men who accurately perceived their female partners' HIV-related risk factors and those who did not. Similarly, length of relationship did not differ between concordant and discordant couples. Overall, these findings show gender differences in the relationship between concordance and DAS T-scores, with young mothers accurately perceiving their male partners' HIV-related behaviors having greater relationship quality but not duration.

Discussion

This study differs in several areas from previous investigations of concordance in reports about shared sexual activity and relationship characteristics, and accuracy of perceptions about partners' HIV-related risk factors. Its unique contributions include the focus on childrearing youth of predominantly Latino ethnicity, and incorporation of a dyadic measure of relationship quality and length derived from both partners' responses. Further, the combination of variables examined provides a broad perspective about risk within the context of an intimate relationship. The large majority of young parents in this sample were in monogamous relationships, and concurrency did not differ by gender. However, the conditional probability indices indicated that none of the adolescents accurately perceived concurrency when it was reported by their sex partner. Some participants believed that they were in a monogamous relationship while their partners reported otherwise; a few mistakenly perceived that they were not in a monogamous relationship when, in fact, their partners reported monogamy. These results are consistent with earlier findings that African American adolescents' perceptions often disagree with partner-reported concurrency, and that both females and males are unaware of their partners' sexual behavior outside their relationship (Lenoir et al., 2006). The accuracy of adolescents' perceptions of sex-partner concurrency is particularly important, because poor ability to assess a partner's behavior (i.e., not suspecting that one's partner has other partners) has been found to be associated with increased risk of acquiring an STI. Those aware of concurrent partners are more likely to use condoms consistently (Drumright et al., 2004).

An important finding was that the couple's relationship quality (measured by DAS T-scores) was significantly higher among young women whose perceptions agreed with their male

partners' self-reported HIV-related risk factors than those who did not agree. Surprisingly, this difference in relationship quality was not observed between concordant/discordant groups for male perceptions and female self-reported HIV-related behaviors. These results did not change when we used individual versus couple-average DAS T-scores. Length of relationship did not significantly differ between concordant and discordant couples for any of the variables examined. Our findings partially support the limited evidence suggesting that open communication about sex may be related to satisfaction in the relationship among adolescent dating couples of predominantly Caucasian background (Widman, Welsh, McNulty, & Little, 2006). In Latino and African American adult men and women, relationship satisfaction has been shown to be associated with measures of concordance; however, the likelihood of discordance is greater among women than men when relationship satisfaction is low (Witte et al., 2007). This finding is consistent with our results. Given the limited research in this area, we recommend further examination of gender differences in the association between concordance and relationship quality among adolescents from minority backgrounds.

Based upon the kappa statistic we found moderate agreement between partners' reports about whether condoms were used during the last sex episode. Examination of the raw agreement (percent concordant) and the conditional probability indices increases understanding about the direction and level of concordance. The large majority (77%) of all couples agreed about whether a condom was used during the last sex episode. If one partner reported that condoms were not used, the probability that the other partner agreed was substantial ($CP^- = .83$). There was less agreement that condoms were used than not used as reflected in the lower CP^+ values. Interpretations about couple concordance on condom use in this study vary depending upon the measure reported. These support previously raised concerns about how best to analyze data collected from couples who do not always agree on outcome variables and how best to evaluate the behavior of couples (Harvey et al., 2004). Concurrency measures are not interchangeable and each has its own explanation.

A surprisingly large number of young fathers reported a history of incarceration (45%) and/or gang membership (26%). Their female partners were generally aware of these background factors. The level of agreement for partner history of incarceration is higher than reported in other studies (Stoner et al., 2003). However, it is unknown whether the adolescents were aware of the high incidence of HIV among incarcerated persons (Maruschak, 2007). The reported rates of methamphetamine use during the past month were low; agreement was greater between partners about nonuse than use of this drug.

Participants frequently lacked awareness about whether their intimate partner had ever received an HIV test. This finding supports past research showing that communication about HIV testing in relationships of adolescents and young adults is often low (Seal, 1997). Nearly 75% of the young mothers reported receiving an HIV test, and most others stated that they had not been tested. The percent of young fathers (49%) who reported receiving an HIV test was substantially lower. Because voluntary HIV testing is recommended during pregnancy by the American College of Obstetricians and Gynecologists (2004) and the U.S. Public Health Service (1995), it is likely that most adolescent mothers had actually received HIV screening, and some had either forgotten about the testing or were unaware of the procedure. These findings demonstrate the need for health care providers to inform young women clearly about HIV testing procedures. The prenatal period also may provide an opportunity for the male partners to receive HIV testing.

Based upon our findings, clinicians and health educators are encouraged to design HIV prevention programs for young parenting couples that foster preservation of their positive risk-reducing behaviors, particularly maintaining monogamy. Although the vast majority of

participants in our study did not report concurrent partners, promoting continued adherence to monogamy and verification of HIV-negative status are appropriate HIV prevention strategies for couples in long-term relationships involving unprotected sexual activity. Our data also support the need for routine incorporation of strategies in HIV prevention programs to promote truthful and open discussion about condom use and HIV testing within sexual partnerships. Encouragement of open discussions between couples has been identified as a potential approach to reduce the prevalence of high-risk sexual behaviors (Amaro, 1995; Amaro & Raj, 2000; Wingood & DiClemente, 1998). Promoting sexual communication among young parents of ethnic minority backgrounds requires an understanding of their culture. Establishing personal relationships and emphasizing the importance of family health rather than individual behavior may be an effective and culturally appropriate approach. Additional steps to promote culturally sensitive interventions may include using culturally appropriate language (e.g., idioms), addressing commonly held beliefs within the group (e.g., machismo, sexual shame), considering the specific context of participants' lives, addressing risk as a community problem, demonstrating caring (e.g., by offering meals), and matching ethnic/racial background of facilitators with participants (Marín, 2003).

Differences in outcomes (e.g., high rate of monogamy, low substance use) between the current study and other investigations may be related to a variety of factors, including sample composition and age range. Participants were predominantly Latino youth recruited from community settings rather than STD and family planning clinics. They were in long-term, stable relationships and had recently given birth. For many of the young women and men in our sample, the process of becoming a parent was associated with health-promoting behaviors (e.g., monogamy). A growing body of literature suggests that the experience of having children may be a transformative one for both teen mothers and fathers and can lead to significant, positive behavior change (Foster, 2004; Hunt, Joe-Laidler, & MacKenzie, 2005; Lesser et al., 2001).

In interpreting our findings, consideration also must be given to the limitations. As in previous research on concordance, we exclusively relied on self-report data. It is not possible to determine the extent to which disagreement between partners is due to inaccurate perceptions or false reporting. High agreement for low-frequency behaviors also may reflect correct guessing that a behavior has not occurred rather than direct knowledge of the behavior's absence. Similarly, the assumption should not be made that interpartner agreement reflects engagement in conversation within the relationship, because data as presented do not allow disentanglement of partner communication level. Our participants were predominantly Latino childrearing adolescents who agreed to participate in an HIV prevention program; therefore, they may have been in a more committed relationship than non-childrearing youth. These differences may affect the external validity of our findings. Nonetheless, this research highlights the importance of relationship quality on accuracy of females' perceptions about their partners' HIV-related risk factors. A final limitation is that discordant reports between partners may be related to measurement error and participant influences such as self-presentation bias (Weinhardt, Forsyth, Carey, Jaworski, & Durant, 1998).

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References

- American College of Obstetricians and Gynecologists (ACOG), Committee on Obstetric Practice. Prenatal and perinatal human immunodeficiency virus testing: Expanded recommendations. ACOG Committee Opinion No. 304. *Obstetrics and Gynecology* 2004;104:1119–1124. [PubMed: 15516421]
- Amaro H. Love, sex, and power: Considering women's realities in HIV prevention. *American Psychologist* 1995;50:437–447. [PubMed: 7598292]
- Amaro H, Raj A. On the margin: Power and women's HIV risk reduction strategies. *Sex Roles* 2000;42:723–749.
- Bennetts A, Shaffer N, Phophong P, Chaiyakul P, Mock PA, Neeyapun K, et al. Differences in sexual behavior between HIV-infected pregnant women and their husbands in Bangkok, Thailand. *AIDS Care* 1999;11:649–661. [PubMed: 10716006]
- Bonds DD, Gondoli DM. Examining the process by which marital adjustment affects maternal warmth: The role of coparenting support as a mediator. *Journal of Family Psychology* 2007;21:288–296. [PubMed: 17605551]
- Bralock A, Koniak-Griffin D. Relationship, power, and other influences on self-protective sexual behaviors of African American female adolescents. *Health Care for Women International* 2007;28:247–267. [PubMed: 17364984]
- Carballo-Diequez A, Remien RH, Dolezal C, Wagner G. Reliability of sexual behavior self-reports in male couples of discordant HIV status. *Journal of Sex Research* 1999;36:152–158.
- Catania JA, Gibson DR, Chitwood DD, Coates TJ. Methodological problems in AIDS behavioral research: Influences on measurement error and participation bias in studies of sexual behavior. *Psychological Bulletin* 1990;108:339–362. [PubMed: 2270232]
- Centers for Disease Control and Prevention (CDC). HIV transmission among male inmates in a state prison system—Georgia, 1992–2005. *Morbidity and Mortality Weekly Report* 2006;55(15):421–426. [PubMed: 16628181]
- Coates RA, Calzavara LM, Soskolne CL, Read SE, Fanning MM, Shepherd FA, et al. Validity of sexual histories in a prospective study of male sexual contacts of men with AIDS or an AIDS-related condition. *American Journal of Epidemiology* 1988;128:719–728. [PubMed: 3421238]
- Cohen J. A coefficient of agreement for nominal scales. *Educational and Psychological Measurement* 1960;20:37.
- Crane DR, Middleton KC. Establishing criterion scores for the Kansas Marital Satisfaction Scale and the Revised Dyadic Adjustment Scale. *American Journal of Family Therapy* 2000;28:53–60.
- De Boer MA, Celentano DD, Tovanabutra S, Rugsapao S, Nelson KE, Suriyanon V. Reliability of self-reported sexual behavior in human immunodeficiency virus (HIV) concordant and discordant heterosexual couples in northern Thailand. *American Journal of Epidemiology* 1998;147:1153–1161. [PubMed: 9645794]
- Drumright LN, Gorbach PM, Holme KK. Do people really know their sex partners? Concurrency, knowledge of partner behavior, and sexually transmitted infections within partnerships. *Sexually Transmitted Diseases* 2004;31:437–442. [PubMed: 15215701]
- Ellen JM, Vittinghoff E, Bolan G, Boyer CB, Padian NS. Individuals' perceptions about their sex partners' risk behaviors. *Journal of Sex Research* 1998;35:328–332.
- Ellish N, Weisman CS, Celentano D, Zenilman J. Reliability of partner reports of sexual history in a heterosexual population at a sexually transmitted disease clinic. *Sexually Transmitted Diseases* 1996;23:446–452. [PubMed: 8946627]
- Family Health International. Adolescents: An underserved population (Chapter 1). Meeting the needs of young clients: A guide to providing health services to adolescents. [Retrieved December 17, 2007]. 2000 from <http://www.fhi.org/en/RH/Pubs/servdelivery/adolguide/index.htm>
- Fleiss, JL. *Statistical methods for rates and proportions*. Wiley; New York: 1981.
- Foster J. Fatherhood and the meaning of children: An ethnographic study among Puerto Rican partners of adolescent mothers. *Journal of Midwifery and Women's Health* 2004;49:118–125.
- Graham JM, Liu YJ, Jeziorski JL. The Dyadic Adjustment Scale: A reliability generalization meta-analysis. *Journal of Marriage and Family* 2006;68:701–717.

- Harvey SM, Bird ST, Henderson JT, Beckman LJ, Huszti HC. He said, she said: Concordance between sexual partners. *Sexually Transmitted Diseases* 2004;31:185–191. [PubMed: 15076933]
- Hunt G, Joe-Laidler K, MacKenzie K. Moving into motherhood: Gang girls and controlled risk. *Youth and Society* 2005;36:333–373.
- Kaiser Family Foundation. *Fact sheets: Black Americans and HIV/AIDS and Latinos and HIV/AIDS*. [Retrieved May 12, 2007]. 2008 from www.kff.org
- King KE, Arnett PA. Predictors of dyadic adjustment in multiple sclerosis. *Multiple Sclerosis* 2005;11:700–707. [PubMed: 16320731]
- Koniak-Griffin, Brecht. AIDS risk behaviors, knowledge, and attitudes among pregnant adolescents and young mothers. *Health Education Behavior* 1997;24:613–624. [PubMed: 9307897]
- Koniak-Griffin D, Lesser J, Nyamathi A, Uman G, Stein J, Cumberland W. Project CHARM: An HIV prevention program for adolescent mothers. *Family and Community Health* 2003;26:94–107. [PubMed: 12802115]
- Koniak-Griffin D, Lesser J, Henneman T, Huang R, Huang X, Tello J, et al. HIV prevention for Latino adolescent mothers and their partners. *Western Journal of Nursing Research*. (in press).
- Koniak-Griffin D, Lesser J, Uman G, Nyamathi A. Teen pregnancy, motherhood, and unprotected sexual activity. *Research in Nursing and Health* 2003;26:4–19. [PubMed: 12532363]
- Landis J, Koch. The measurement of observer agreement for categorical data. *Biometrics* 1977;33:159–174. [PubMed: 843571]
- Lenoir CD, Adler NE, Borzekowski DL, Tschann JM, Ellen JM. What you don't know can hurt you: Perceptions of sex-partner concurrency and partner-reported behavior. *Journal of Adolescent Health* 2006;38:179–185. [PubMed: 16488813]
- Lesser J, Koniak-Griffin D, González-Figueroa E, Huang R, Cumberland WG. Childhood abuse history and risk behaviors among teen parents in a culturally rooted, couple-focused HIV prevention program. *Journal of the Association of Nurses in AIDS Care* 2007;18:18–27. [PubMed: 17403493]
- Lesser J, Tello J, Koniak-Griffin D, Kappos B, Rhys M. Young Latino fathers' perceptions of paternal role and risk for HIV/AIDS. *Hispanic Journal of Behavioral Sciences* 2001;23:327–343.
- Marín BV. HIV prevention in the Hispanic community: sex, culture, and empowerment. *Journal of Transcultural Nursing* 2003;14:186–192. [PubMed: 12861921]
- Marín, G.; Vanoss-Marín, B. *Research with Hispanic populations*. Sage; Newbury Park, CA: 1991.
- Maruschak, LM. HIV in prisons, 2005. Bureau of Justice Statistics Bulletin. [retrieved December 17, 2007]. Sep2007 from <http://www.ojp.usdoj.gov/bjs/abstract/hivp05.htm>
- McKay W, Maclean W, Bourgeois M. *Journal of Developmental and Behavioral Pediatrics* 2002;23:31–36. [PubMed: 11889349]
- Nelson SJ, Manhart LE, Gorbach PM, Martin DH, Stoner BP, Aral SO, et al. Measuring sex partner concurrency: It's what's missing that counts. *Sexually Transmitted Diseases* 2007;34:801–807. [PubMed: 17551413]
- Ochs EP, Binik YM. The use of couple data to determine the reliability of self-reported sexual behavior. *Journal of Sex Research* 1999;36:374–384.
- Padian NS. Sexual histories of heterosexual couples with one HIV-infected partner. *American Journal of Public Health* 1990;80:990–991. [PubMed: 2368866]
- Padian NS, Aral S, Vranizan K, Bolan G. Reliability of sexual histories in heterosexual couples. *Sexually Transmitted Diseases* 1995;22:169–172. [PubMed: 7652661]
- Peragallo N, DeForge B, O'Campo P, Lee SM, Kim YJ, Cianelli R, et al. A randomized clinical trial of an HIV-risk-reduction intervention among low-income Latina women. *Nursing Research* 2005;54:108–118. [PubMed: 15778652]
- Posner KL, Sampson PD, Caplan RA, Ward RJ, Cheney FW. Measuring interrater reliability among multiple raters: An example of methods for nominal data. *Statistics in Medicine* 1990;9:1103–1115. [PubMed: 2244082]
- Rojas-Guyler L, Ellis N, Sanders S. Acculturation, health protective sexual communication, and HIV/AIDS risk behavior among Hispanic women in a large midwestern city. *Health Education and Behavior* 2005;32:767–779. [PubMed: 16267147]

- Seage G, Mayer K, Horsburgh C, Cai B, Lamb G. Corroboration of sexual histories among male homosexual couples. *American Journal of Epidemiology* 1992;135:79–84. [PubMed: 1736663]
- Seal DW. Interpartner concordance of self-reported sexual behavior among college dating couples. *Journal of Sex Research* 1997;34:39–55.
- Soloway CT, Soloway MS, Kim SS, Kava BR. Sexual psychological and dyadic qualities of the prostate cancer 'couple.'. *BJU International* 2005;95:780–785. [PubMed: 15794782]
- Spanier GB. Measuring dyadic adjustment: new scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family* 1976;38:15–28.
- Stoner BP, Whittington WH, Aral SO, Hughes JP, Handsfield HH, Holmes KK. Avoiding risky sex partners: Perception of partners' risks v. partners' self reported risks. *Sexually Transmitted Infections* 2003;70:197–201. [PubMed: 12794201]
- Treviño YA, Wooten HR, Scott RE. A correlational study between depression and marital adjustment in Hispanic couples. *Family Journal: Counseling and Therapy for Couples and Families* 2007;15:46–52.
- Upchurch D, Lillard L, Aneshensel C, Fang L. Inconsistencies in reporting the occurrence and timing of first intercourse among adolescents. *Journal of Sex Research* 2002;39:197–206. [PubMed: 12476267]
- Upchurch DM, Weisman CS, Shepherd M, Brookmeyer R, Fox R, Celentano DD, et al. Interpartner reliability of reporting recent sexual behaviors. *American Journal of Epidemiology* 1991;134:1159–1165. [PubMed: 1746526]
- U.S. Public Health Service recommendations for human immunodeficiency virus counseling and voluntary testing for pregnant women. *Morbidity & Mortality Weekly Report* 1995;44(RR-7):1–15. [PubMed: 7799912]
- Villarruel AM, Jemmott JB III, Jemmott LS. A randomized controlled trial testing an HIV prevention intervention for Latino youth. *Archives of Pediatric and Adolescent Medicine* 2006;160:772–777.
- Weinhardt LS, Forsyth AD, Carey MP, Jaworski BA, Durant LE. Reliability and validity of self report measures of HIV-related sexual behavior: Progress since 1990 and recommendations for research and practice. *Archives of Sexual Behavior* 1998;27:155–180. [PubMed: 9562899]
- Widman L, Welsh DP, McNulty JK, Little KC. Sexual communication and contraceptive use in adolescent dating couples. *Journal of Adolescent Health* 2006;39:893–899. [PubMed: 17116521]
- Williams, F. Reasoning with statistics. 4th ed. Harcourt Brace Jovanovich; Fort Worth, TX: 1992.
- Wingood GM, DiClemente RJ. The influence of psychosocial factors, alcohol, and drug use on African-American women's high-risk sexual behavior. *American Journal of Preventive Medicine* 1998;15:54–60. [PubMed: 9651639]
- Witte SS, El-Bassel N, Gilbert L, Wu E, Chang M. Predictors of discordant reports of sexual and HIV/sexually transmitted infection risk behaviors among heterosexual couples. *Sexually Transmitted Diseases* 2007;34:302–308. [PubMed: 17016237]
- Youngblut JM, Brooten D, Menzies V. Psychometric properties of Spanish versions of the FACES II and Dyadic Adjustment Scale. *Journal of Nursing Measurement* 2006;14:181–189. [PubMed: 17278338]

Table 1

Sociodemographic Characteristics of Sample (N=336)

Variable	Female Partner Mean (SD) Median (Range)	Male Partner Mean (SD) Median (Range)	Total Sample Mean (SD) Median (Range)
Age	18.54 (1.67) 18.60 (14.27-23.31)	20.35 (2.19) 19.87 (15.63-25.97)	19.45 (2.15) 19.28 (14.27-25.97)
Years of Education	11.19 (1.44) 11.00 (6.00-16.00)	11.40 (1.44) 12.00 (4.00-15.00)	11.29 (1.44) 12.00 (4.00-16.00)
Acculturation (Latino participants only)	3.65 (.99) 3.63 (1.00-5.00)	3.44 (.96) 3.50 (1.00-5.00)	3.55 (0.98) 3.50 (1.00-5.00)
Length of Relationship	34.74 (18.49) 30.00 (3.00-99.00)	35.59 (19.81) 36.00 (3.00-120.00)	35.16 (19.14) 32.50 (3.00-120.00)

Variable	Frequency (Percent)	Frequency (Percent)	Frequency (Percent)
Ethnicity			
Latino	144 (85.7%)	137 (81.5%)	297 (83.6%)
African-American	9 (5.4%)	12 (7.1%)	21 (6.3%)
White	5 (3.0%)	0 (0.0%)	5 (1.5%)
Mixed/Other	10 (5.9%)	19 (11.4%)	29 (8.6%)
History of STI (lifetime)	25 (14.9%)	15 (8.9%)	40 (11.9%)
History of Physical Abuse	46 (27.4%)	46 (27.4%)	92 (27.4%)
Lifetime History of Sexual Abuse	58 (34.5%)	21 (12.5%)	79 (23.5%)
Number Reporting	6 (4%)	8 (5%)	14 (4%)
Concurrent Sexual Partners			

Table 2

Associations Between Responses of Partners for Relationship Characteristics, Episodes of Unprotected Sex and Protected Sex

Variable	Mean Difference Between Female and Male Partner (standard deviation)	Correlation Coefficient Between Female and Male Partner
Length of Relationship in Months	– 0.85 (8.94)	0.893 ($p<.0001$) ^a
Number of Episodes of Unprotected Vaginal Sex in Past 3 Months	– 7.63 (83.39)	0.460 ($p<0.0001$) ^b
Number of Episodes of Protected Vaginal Sex in Past 3 Months	– 0.21 (19.57)	0.545 ($p<0.0001$) ^b

^a Pearson's correlation coefficient is calculated for normally distributed continuous variable(s).

^b Spearman's rank correlation coefficient is calculated for highly skewed continuous variable(s).

Table 3
Concordance between Partners on Cohabitation, Sexual Behaviors and Other HIV-Related Risk Factors: N=168 Couples

Variable	Percent that reported engaging in the behavior ^a	Concordance between responses			CP ^a , CPR ^{-c}	Kappa ^c
		Number of concordant couples	% of all 168 couples	% of couples responding yes/no ^b		
Cohabitation						
Male Report of Behavior vs. Female Report of Behavior	57.1% 58.9%	151	89.9%	89.9%	+ 0.913, -0.879	0.793
Condom Use Last Sex						
Male Report of Behavior vs. Female Report of Behavior	34.5% 34.5%	130	77.4%	77.4%	+ 0.672, -0.827	0.500
Concurrent Sexual Partner(s)						
Female Perception vs. Male Report of Behavior	4.8%	128	76.2%	94.8%	+ 0.0, -0.973	-0.026
Male Perception vs. Female Report of Behavior	3.6%	125	74.4%	94.0%	+ 0.0, -0.969	-0.031
Methamphetamine Use Past Month						
Female Perception vs. Male Report of Behavior	11.3%	142	84.5%	91.0%	+ 0.462, -0.951	0.415
Male Perception vs. Female Report of Behavior	4.2%	149	88.7%	94.3%	+ 0.471, -0.970	0.443
Ever in Jail						
Female Perception vs. Male Report of Behavior	44.6%	136	81.0%	85.0%	+ 0.840, -0.859	0.699
Male Perception vs. Female Report of Behavior	7.7%	155	92.3%	96.3%	+ 0.750, -0.980	0.730
Ever in Gang						
Female Perception vs. Male Report of Behavior	26.2%	141	83.9%	88.7%	+ 0.763, -0.926	0.689
Male Perception vs. Female Report of Behavior	3.0%	152	90.5%	96.2%	+ 0.250, -0.981	0.232
HIV Testing						
Female Perception vs. Male Report of Behavior	49.4%	74	44.1%	66.7%	+ 0.704, -0.619	0.324

Variable	Percent that reported engaging in the behavior ^a	Concordance between responses		CP ⁺ , CPR ^{-c}	Kappa ^c
		Number of concordant couples	% of all 168 couples yes/no ^b		
Male Perception vs. Female Report of Behavior	74.4%	82	48.8% 68.3%	+ 0.768, -0.500	0.277

^aFor women's perceptions, the percent shows % of men who reported engaging in the behavior; for men's perceptions, the percent shows % of females who reported engaging in the behavior.

^bDenominator excludes couples in which a partner responded "don't know". The denominator varies from 111 to 168, depending on question.

^cCP⁺, CP⁻, and Kappa calculations are based on the valid "Yes" and "No" scores in the 2x2 frequency tables, and exclude "don't know" responses.

Table 4

Relationship Quality and Length by Concordance on HIV Related Risk Factors^a

Variable	Concordance Status ^b	All Couples N (%)	Mean	t	p-value
HIV Risk Factors					
Female Perception vs. Male Report of Behavior					
Relationship Quality – DAS T-Scores ^c	Concordant	41 (24.4%)	50.0		
	Discordant	127 (75.6%)	46.9	2.24	.027
Length of Relationship (in months) ^c	Concordant	41 (24.4%)	34.5		
	Discordant	127 (75.6%)	35.4	-.27	.790
Male Perception vs. Female Report of Behavior					
Relationship Quality – DAS T-Scores ^c	Concordant	60 (35.7%)	46.7		
	Discordant	108 (64.3%)	48.2	-1.10	.274
Length of Relationship (in months) ^c	Concordant	60 (35.7%)	36.1		
	Discordant	108 (64.3%)	34.6	.50	.617

^aBased on compilation of five HIV-related risk factors: Concurrent sexual partner(s), methamphetamine use during last month, history of incarceration and gang membership, and absence of HIV testing.

^bClassification of concordance is based upon 100% agreement between partner's perception and the other partner's report for *all* five HIV-related risk factors in a sample of 168 couples. When partners disagree on one or more risk factors or express "don't know", the couple is classified as discordant.

^cBased on average of responses of the two partners.