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HIV Testing among Heterosexual Young Adults: The Influence of Individual Attitudes and Behaviors, Partner's Risk-Taking and Relationship Dynamics

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Abstract

This study relies on survey (N=704) and in-depth qualitative (N = 100) interviews (Toledo Adolescent Relationship Study) to examine individual, partner, and relationship barriers and facilitators to HIV testing in a sample of young adults. Consistent with the public health goal of routine testing, nearly 40% of respondents had an HIV test within the context of their current sexual relationship, and women were significantly more likely to have tested within the current relationship than were men. For women, it was both their own risky behavior, *and* the partners' characteristics and related relationship dynamics that distinguished testers from non-testers. In contrast, for men their own risky behavior was the most salient factor influencing their odds of being tested. These results showcase gender specific approaches to best promote sexual health, i.e., routine HIV testing among young adults.

Keywords

HIV testing; Sexual activity; Young adults; Sexual health

INTRODUCTION

The CDC (2008; 2010) recently reported that the HIV/AIDS epidemic is more extensive than previously assumed and has revised their prevention strategy to focus, more so than in past decades, on heterosexual transmission among adolescents and young adults. Teens and young adults are among the fastest growing subgroups diagnosed with HIV, with 50% of new infections in the U.S. occurring among 13–24 year olds (Futterman, 2005). Currently, heterosexual transmission accounts for over 70% of women's HIV cases in the U.S. (CDC, 2006). Although men who have sex with men are the largest subgroup at risk, the CDC's revised strategy reflects a changing feature of the HIV/AIDs epidemic: increasing numbers of individuals, especially women, are infected heterosexually through primary and secondary sexual partners.

Behaviors associated with preventing HIV/AIDS include abstinence, consistent use of condoms and engaging in monogamous sexual relationships with non-infected partners

(Britton et al., 1998; Misovich, Fisher, & Fisher, 1997). Yet unmarried young adults have increased risks for HIV exposure due to increases in sexual activity, greater number of partners, and greater risk of an unintended pregnancy (Chandra, Mosher, Copen, & Sionean, 2011; Mosher & Jones, 2010). Moreover, many young people are unaware of their HIV status. Undiagnosed individuals may inadvertently transmit the infection to others (Campsmith, Rhodes, & Hall, 2009; Harris, Gordon-Larsen, Chantala, & Udry, 2006). To prevent new HIV cases it is critical for individuals to get tested routinely, yet our understanding of factors associated with young adults' testing practices is limited.

Using survey data from young adults involved in current or recent heterosexual intimate relationships, the Toledo Adolescent Relationships Study (TARS) (n = 704), we examine factors that may influence recent HIV testing. Recognizing the complexity of decisions involving sexuality and health behaviors, we explore (1) an individual's own attitudes (condom efficacy, sexual permissiveness) and risk behaviors (sexual non-exclusivity, lifetime sexual partners), (2) partner's risk behaviors (sexual non-exclusivity, lifetime sexual partners), and (3) relationship dynamics (love, trust, power, sexual communication, sexual coercion, and pregnancy) as factors that may act as obstacles or facilitators to HIV testing with this specific partner. The analyses also include demographic characteristics shown in prior work to influence testing. To supplement these analyses, we examine narratives from a subset of 100 TARS participants whose survey responses reflected prior risk behaviors. Narrative excerpts illustrate individuals' self-described motives for testing, illuminating aspects of decision-making that may be difficult to capture in survey research. Identifying individual, partner and relationship characteristics associated with testing is important to a comprehensive understanding of how young adults' decisions involving sexual health unfold within the context of their intimate relationships. Our findings may be useful in designing enhanced HIV testing and prevention efforts targeted toward this age group.

BACKGROUND

HIV Testing and Gender

In past decades, a primary reason for not testing for HIV was the stigma associated with requesting a test and the anxiety provoked while waiting for results (Chesney & Smith, 1999; Exner, Hoffman, Parikh, Leu, & Ehrhardt, 2002; Fortenberry et al., 2002; Spielberg, Kurth, Gorbach & Goldbaum, 2001). With rapid testing now widely accessible, and results available in about twenty minutes, it is faster and less burdensome to get tested. Yet current estimates indicate that as many as one-fifth of the HIV-infected individuals in the U.S. are still unaware of their status, either because they have never been tested or have not been tested recently (Campsmith et al., 2009; Hall et al., 2008), underscoring the need to better understand testing practices among young people.

Much work on testing prevalence among non-clinical samples of young adults has used the Youth Risk Behavior Surveillance (YRBS) (e.g., CDC, 2006), the Longitudinal Study of Adolescent Health (Add Health) (e.g., Hahm, Song, Ozonoff, & Sassani, 2009; Nguyen et al., 2006) and the National Survey of Family Growth (NSFG) (e.g., Jeffries, 2010; Trepka & Kim, 2010). These data sets, however, assess whether individuals have ever been tested or tested in the past twelve months, but not whether individuals have been tested since being

with their most recent sexual partner. Consistent with widely advocated prevention strategies (e.g., Britton et al., 1998; Campsmith et al., 2009; Hall et al., 2008; Harris et al., 2006; Misovich et al., 1997), our study moves beyond prior work by assessing whether young adults in *their current or most recent relationship* are getting tested for HIV. We examine individual characteristics, partner's risk behaviors, and relationship dynamics that distinguish testing decisions among men and women.

Our work integrates health behavior and gender vulnerability approaches. The traditional health behavior approach focuses on the significance of attitudes, efficaciousness and behavioral choices, including partner choices, which put individuals at risk (e.g., DiClemente & Peterson, 1994; Hahm et al., 2009; Longmore, Manning, Giordano, & Rudolph, 2003; Rosenstock, Stretcher, & Becker, 1994). Yet, health behavior models often assume that women have as much personal control over sexual situations, and ability to put their beliefs into action, as do men (Higgins, Hoffman, & Dworkin, 2010). Additionally, such models do not typically distinguish the individual's own risky attitudes and behavior from the choice of a partner whose behavior puts the individual at risk for HIV.

Because women have greater odds of infection by primary or secondary male sexual partners, and disproportionately report being tested for HIV (Arrington-Sanders & Ellen, 2008), some scholarship has conceptualized gendered power and other relational dynamics as an important backdrop to the heterosexual HIV/AIDS epidemic. This approach, which Higgins, Hoffman, and Dworkin (2010) termed the gender vulnerability hypothesis, has emphasized contextual factors, apart from individual behavior and partner's risk behaviors, which lead to women's enhanced vulnerability to HIV. This perspective has highlighted *relational dynamics* (e.g., Amaro & Raj, 2000; Corbett, Dickson-Gomez, Hilario, & Weeks, 2009; Higgins et al., 2010; Sobo, 1997) as essential elements contributing to women's HIV risk. This scholarship reflects women's greater vulnerability to heterosexually transmitted HIV, but has tended to overlook men's perspectives.

Recognizing the complexity of sexual health we integrate these approaches and advocate for examining the attitudinal and behavioral risk factors that the individual brings to the relationship, partner's risk behaviors, and features of the relationship itself. The research reviewed below focuses primarily on the broader literature on sexual risk taking as a useful conceptual starting point for the current investigation. Yet more research is needed to determine whether variables identified in this literature also influence testing decisions, and whether they appear to have a similar effect on men and women's decisions to be tested.

Individual Characteristics: Efficacy, Permissive Attitudes, and Risky Behaviors

If used consistently and correctly, condoms are effective in reducing the risk of HIV infection (CDC, 2010). Thus, given its relevance for HIV prevention, we examine efficaciousness in the negotiation and use of condoms on subsequent testing practices. Although studies have examined condom efficacy as a predictor of actual condom use (e.g., Longmore et al., 2003), and HIV coping efficacy on attitudes toward routine HIV testing (Arrington-Sanders, Ellen, & Leonard, 2009), condom efficacy has not been examined in large surveys of correlates of testing. Condom efficacy is likely, on average, higher for men; nevertheless, it likely is an important correlate of testing for women. Kyomugisha (2006)

argued that men are more likely than women to control sexual encounters, and to control condom use, which may limit women's ability to protect themselves. In a similar vein, in a clinic sample of HIV positive and negative girls, aged 12–16, the majority believed either both partners or only men were responsible for condom use because men wear the condom (Marhefka & Demetriou, 2009). If individuals believe they are efficacious in negotiating condoms, they may take the necessary steps to be tested. Conversely, it is possible that efficacious individuals may feel protected from HIV exposure and not get tested. We explore the influence of condom efficacy on HIV testing, but do not specify the relationship direction.

Permissive attitudes are associated with risky sexual behaviors, such as multiple and concurrent sexual partners and casual sexual partnerships (e.g., Basen-Engquist, & Parcel, 1992; Jemmott & Jemmott, 1990; Lyons, Giordano, Manning, & Longmore, 2010). We are not certain, however, whether such attitudes will operate similarly when we focus on HIV testing rather than risky behaviors themselves. Associations between permissive sexual attitudes and reluctance to get tested for HIV have been found in some African societies, especially among men (e.g., Steinberg, 2008), yet whether this would be the case in the U.S. is unclear. For example, it is possible that individuals who hold permissive attitudes may experience less reluctance to seek information about their health status. We explore whether permissiveness is associated with testing, but do not specify, a priori, an expected direction.

Although efficacy beliefs and permissive sexual attitudes are expected to be influential, individuals' life experiences, including prior risky sexual experiences, likely have greater implications for behavior (e.g., Bucx, Raaijmakers, & van Wel, 2010). Studies focusing on high-risk populations have found positive associations between behavioral risks and HIV testing (e. g., Anderson, Carey & Taveras, 2000; Choi & Catania, 1996; Denison, Lungu, Dunnett-Dagg, McCauley, & Sweat, 2006; Stein & Nyamathi, 2000; Setia, Quesnel-Vallee, Curtis, & Lynch, 2009; Straub et al. 2011; Tolou-Shams et al., 2007). We expect that those who get tested will be responding to their greater sexually risky behavior (e.g., sexual non-exclusivity and a higher average number of lifetime sex partners). We also expect these factors to be the strongest predictors of testing.

Partner Risk Behaviors: Prior Number of Sex Partners and Sexual Non-Exclusivity

Individuals who get tested likely believe that their sexual partner's behavior is risky in terms of prior number of sexual partners and/or lack of sexual exclusivity. In a qualitative study of poor, urban, Black women, Sobo (1997) found that women in sexual relationships relied on perceptions of their partner's behaviors, and not their own risk behaviors, to decide whether to get tested. Yet, Tolou-Shams et al. (2007) prospectively examining the likelihood of getting tested for HIV at a three month follow-up found no significant differences between individuals reporting sex with a perceived risky partner and those who did not report a high risk partner.

An important goal of the current investigation, then, is assessing whether the individual's own risk portfolio or that of the partner is more salient regarding the decision to get tested. In addition, the analyses allow us to assess the impact of these two sets of concerns for men and women. The current study moves beyond prior work by investigating more

systematically the role of the individual's own attitudes and sexual risk behaviors, and the partner's risk behaviors within the context of a large heterogeneous sample that includes male and female respondents.

Relationship Dynamics: Love, Trust, Power, Communication, Coercion, and Pregnancy

As the gender vulnerability hypothesis has highlighted, the dynamics of women's intimate relationships may affect whether women get tested for HIV (e.g., Graffigna & Olson, 2009; Trieu, Modeste, Marshak, Males, & Bratton, 2010). Scholars have theorized that due to gendered socialization, women place a higher value on romantic love (e.g., Amaro, 1995; Amaro, Raj, & Reed, 2001; Blanc, 2001; Kyomugisha, 2006; Logan, Cole, & Leukefeld, 2002; Sobo, 1995; Worth, 1989). For example, in HIV/AIDS education focus groups composed of same-sex teens, girls resonated with emotional and boys with physical aspects of sex (Hoppe et al., 2004). It has been argued that romantic love is a barrier to safe sex and HIV testing for women because such feelings work against objective judgments of sexual risk (e.g., Holland & Eisenhart, 1990; Warr, 2001, p. 241). Recognizing the emphasis on romantic love, and the possible risks posed, we expect that both women and men who report higher levels of romantic love will be less likely to get tested for HIV.

Feelings of mistrust have a straightforward connection with decisions to secure information about one's HIV status, but may also involve other considerations. Women who characterize their intimate relationship as involving trust may be reluctant to 'rock the boat' or to introduce what may be perceived as an indication of mistrust (Holland & Eisenhart, 1990). As romantic relationships evolve, individuals may become more motivated to protect the relationship from conflict that occurs as a result of bringing up the subject of HIV testing, even at the expense of self-protection (Misovich et al., 1997). We expect that both men and women in relationships characterized by trust will be less likely to get tested for HIV.

Power in one's relationship may influence not only sexual risk-taking, but decisions about testing. For women, power imbalance is associated with reduced sexual autonomy (Blanc, 2001; Pulerwitz, Amaro, De Jong, Gortmaker, & Rudd, 2002). Yet, prior research based on the TARS sample of adolescents and young adults has documented that female respondents report greater power in their intimate relationships (Giordano, Longmore, & Manning, 2006; Giordano, Manning, Longmore, & Flanigan, 2010). Even when unfavorable power imbalances exist, Kyomugisha (2006) theorized that women tend to be socialized to tolerate these dynamics favoring male power, and often perceive themselves as powerless to negotiate or insist on safer sexual practices. However, prior research has not established whether power influences decisions to be tested. Individuals with more power may take care of themselves by getting tested; conversely, individuals with less power may get tested because they are not sure if partners are sexually exclusive. We explore the influence of power imbalances on HIV testing.

A comprehensive understanding of relationship dynamics also necessitates attention to sexual communication. Although sexual communication is critical for relationship quality (e.g., Lefkowitz, Boone, & Shearer, 2004; Longmore, Eng, Giordano, & Manning, 2009; Tolou-Sham et al., 2007), its influence on HIV testing is not clear. Individuals who are uncomfortable or experience difficulty communicating about sex or condom use may be

reluctant to take the steps necessary to be tested (Tolou-Sham et al., 2007). Conversely, it could be that those who communicate easily about sexual matters may be more likely to get tested. We explore the relationship between sexual communication and HIV testing for men and women.

Coercive sex may be associated not only with greater sexual risk for women (Blanc, 2001; Kyomugisha, 2006, p. 4; Pulerwitz, Amaro, De Jong, Gortmaker, & Rudd, 2002), but with reluctance to get tested. Consistent with prior research and theorizing about sexual risk-taking, we expect that coercive sex will be associated with women's lower odds of getting tested for HIV with a specific, recent partner. However, unlike prior studies we consider this relationship for male respondents as well.

Another important development within the relationship is the couple's experience of a pregnancy. The consequences of unprotected sexual behavior are often experienced more intimately by women (i.e., through pregnancy and childbearing), yet these experiences are likely to provide better access to healthcare, particularly in the context of prenatal care (Bond, Lauby, & Batson, 2005: Hahm et al., 2009). We expect that experiencing a pregnancy with the current or most recent partner will be associated with greater odds of HIV testing for women. We also examine whether partner's pregnancy is associated with HIV testing for men.

Demographic Characteristics

Studies examining U.S. demographic patterns have provided much needed baseline information regarding the influence of age, race, and socioeconomic status on testing (e.g., Hahm et al., 2009; Nguyen et al., 2006). Consistent with the age gradient associated with most health behaviors (Evans, Barer, & Marmor, 1994), men and women in their twenties are more likely than teens to ever be tested for HIV or to be tested in the past 12 months (Straub et al., 2011). We expect that age will be associated with HIV testing with a specific, most recent or current intimate partner. HIV risk and testing is also more common among economically disadvantaged groups (CDC, 2010; Karon, Fleming, Steketee, & DeCock, 2001; Santelli, Lowry, Brener, & Robin, 2000). Parents' education, a measure of social advantage, is expected to be negatively associated with HIV testing. Testing is more prevalent among non-white individuals regardless of socioeconomic status (CDC, 2008; Duran et al., 2010; Hahm et al., 2009). We expect that non-White relative to White respondents will have higher odds of testing.

CURRENT INVESTIGATION

Our goal in the current investigation is to build on previous studies by assessing the association between individual risk characteristics, partner's risk behaviors, and relationship dynamics on HIV testing among a sample of young women and men. Is HIV testing linked more closely to the individual's own risk portfolio, that of the partner, or the dynamics within the relationship? We assess whether these correlates are differentially associated with women and men's decisions to be tested within the context of their current or most recent relationship.

The TARS provides a unique opportunity to examine our research question, and contributes to prior work in six key ways. First, the data include a range of attitudes, behaviors, and perceptions of partner's behaviors, as well as relationship qualities, which permit a more comprehensive assessment of HIV testing correlates. Second, the data are from a more heterogeneous group of young women and men as opposed to those who are already seeking treatment (e.g., Hall, Darville, Barral, & Sucato, 2011) or for whom the extent of representativeness is unknown (e.g., Djokic et al., 2009). Third, our measures move beyond those found in many other studies by examining HIV testing with specific sexual partners whereas many social surveys emphasize having ever been tested or having been tested in the past 12 months. Fourth, we consider gender specific models recognizing that men and women may differ in behavior and the correlates of their behavior may vary. Fifth, a multi-method approach using both survey and narrative data will likely provide greater insights relative to relying solely on a single method approach (Deren et al., 2003). The qualitative data provide more nuanced understandings of the motivations underlying testing decisions. Finally, our study focuses on unmarried young adults during the life stages of late adolescence and early adulthood whose risks for HIV exposure is likely increased due to increases in sexual activity, greater number of partners, and decreases in consistent condom use relative to early adolescence.

DATA and METHOD

Data

The data are from the TARS, a longitudinal study based on a stratified random sample of the year 2000 enrollment records of all youths registered for the 7th, 9th, and 11th grades in Lucas County, Ohio, a largely urban metropolitan area that includes the city of Toledo. The sample is drawn from student rosters from 62 schools across seven school districts, although respondents did not have to attend class to be in the sample. Rosters were made available through Ohio's Freedom of Information Act. The sample, devised by the National Opinion Research Center, includes oversamples of Black and Hispanic adolescents. In the first interview (W1) conducted in 2001, 1,321 adolescents participated in the study. Our study relies on data collected during the fourth interview (W4) conducted in 2006–07. In W4, 83% of the original sample (n = 1,088) were re-interviewed. Interviews were conducted in the respondent's home using preloaded laptops to maintain privacy. Primary parents or guardians were interviewed at W1, and parent's education is from this wave. Our analytic sample includes unmarried respondents who are or were sexually active within their current or most recent relationship (previous 24 months), resulting in a final sample size of $N = 704$ (394 = female and 310 = male young adults).

We also draw on excerpts from in-depth interviews conducted with a subset (n = 100) of the respondents who participated in the wave 4 structured interviews. Respondents were chosen due to their high risk profiles on prior surveys. The in-depth interviews were scheduled separately from the survey interviews. Topics, in general, parallel the survey protocol, but allow more detailed consideration of respondents' romantic and sexual histories. Narrative excerpts are included to explore individuals' self-described reasons for getting/ not getting tested, illuminating aspects of testing decisions that are more difficult to capture via surveys.

While the structured questions tap individuals' attitudinal and sexual risk behaviors, perceptions of partners' behavioral risks, and relationship dynamics associated with testing, the unstructured interviews highlight how young adults themselves give meaning to getting or not getting tested.

Dependent variable

Having been tested for HIV since being with current or most recent sexual partner is measured by asking: "Since the two of you have been together, have you been tested for HIV/AIDS?" We ask respondents answering with respect to their most recent relationship: "While you were with [*name*], were you ever tested for HIV/AIDS?" Responses are coded no (0) and yes (1), with 40% having been tested in this relationship.

Respondents' Attitudes and Sexual Risk Behaviors

Permissive attitudes are measured by asking the degree to which respondents agree with the following eight items: (1) "It's okay to sometimes date more than one person at a time;" (2) "Sometimes I like to date a girl [guy] just for the fun of it;" (3) "A person should only have sex with someone they love;" (4) "A person should only have sex if they are married;" (5) "I would have to be committed to a girl [guy] in order to have sex with her [him];" (6) "It would be okay to have sex with someone I wasn't dating;" (7) "I would feel comfortable having sex with someone I was attracted to, but did not know very well;" and (8) "It is okay to have sex with an old girlfriend [boyfriend]." Responses range from strongly disagree (1) to strongly agree (5) and coding reflects greater permissiveness. The scale score is calculated as the mean of the items. The scale mean and standard deviation are 2.8 and .73, respectively. Cronbach's alpha is .82.

Condom efficacy is measured by asking whether respondents are sure that they could: (1) "plan ahead to have a condom available;" (2) "stop yourself in the heat of passion and use a condom;" and (3) "resist having sex if your partner didn't want to use a condom." Responses range from very unsure (1) to very sure (5).[1] The scale is calculated as the mean of the items answered. For respondents who were missing data on two of the three items (n = 15), missing values are imputed using the scale mean score. The mean and standard deviation for the sample are 3.9 and 1.2, respectively. Cronbach's alpha for the scale is .82.

Not sexually exclusive is measured by asking: "How often have [did] you gotten [get] physically involved ("had sex") with other girls [guys]? Response categories are never (1), hardly ever (2), sometimes (3), often (4) and very often (5), and for multivariate analyses are coded as (0) sexually exclusive and (1) not sexually exclusive. Twenty-one percent of the sample report that they are not sexually exclusive.

Lifetime number of sex partners is measured by asking: "In your lifetime, about how many sex partners have you had?" Lifetime number of sex partners range from 1 to 18, with a mean and standard deviation of 6.3 and 5.4, respectively[2].

[1]Two additional response categories were provided in the original questionnaire so that respondents could indicate that they 1) never use birth control and 2) would never become intimate with someone before marriage. Only a small number of respondents (n = 22) provided one of these answers on one or more of the items. We coded these few responses as missing on the individual items.

Partner's Sexual Risk Behaviors

Partner not sexually exclusive is measured by asking respondents: "How often do you think [*name*] has gotten [was] physically involved ("had sex") with other girls [guys]?" For multivariate analyses responses are coded as partner is believed to be sexually exclusive (0), and partner is not believed to be sexually exclusive (1). Eighteen percent do not believe that their partner is sexually exclusive.

Partner's lifetime number of sex partners is measured by asking respondents: "About how many partners do you think [*name*] had sex with before the two of you became involved?" Responses range from 0 to 12, with a mean response of 3.8 and a standard deviation of 3.8.[3]

Relationship Dynamics

Romantic love is measured using a modified version of Hatfield and Sprecher's (1986) passionate love scale. Respondents are asked the extent to which they agree with the following statements: (1) "I am very attracted to [*name*];" (2) "The sight of [*name*] turns me on;" (3) "I would rather be with [name] than anyone else;" and (4) "[name] always seems to be on my mind." Responses range from strongly disagree (1) to strongly agree (5). The scale score is calculated as the mean of the four items, with a mean and standard deviation of 4 and .8, respectively. Cronbach's alpha is .83.

Trust is measured by asking the extent to which respondents agree with the statement: "There are times when [*name*] cannot be trusted." Responses range from 1 to 5, with higher scores reflecting greater trust. The mean and standard deviation are 3.7 and 1.3, respectively.

Relationship power is measured by asking respondents: "If the two of you disagree[d] about something, which of you usually gets [got] their way?" Respondents answering that they usually get their way are coded as 1, while those responding either neutrally or that their partner usually gets his/her way are coded as 0. Thirty percent report greater relationship power.

Difficulty communicating about sex is measured by asking respondents the extent to which they agree with the statement: "Sometimes I find (found) it hard to talk about sexual matters with [name]." Responses range from strongly disagree (1) to strongly agree (5). The mean and standard deviation are 2 and 1, respectively.

Sexual coercion is assessed by asking: "How often has (did) [name] insist on or made you have sex with her [him] when you didn't want to?" Responses are never (1), once (2), twice (3), three to five times (4), 6 to 10 times (5), 11 to 20 times (6), and more than 20 times (7). The mean and standard deviation for the sample are 1.5 and 1.1, respectively.

Pregnancy with partner is coded as 1 for those respondents who reported they (female) or their partner (male) were currently pregnant and for those who reported having a child(ren)

[2]Responses for lifetime number of sex partners that exceeded 17 were capped at 18. These responses represent the 90th percentile of all responses. That is 90% of all responses fell below 18.

[3]Responses for partner's number of sex partners that exceeded 11 were capped at 12. These responses represent the 90th percentile of all responses. That is, 90% of all responses fell below 12.

with their current or most recent partner, and 0 otherwise. Sixteen percent report a pregnancy.

Respondent's Demographic Characteristics

Age is calculated from the respondent's date of birth and the date of the interview. Respondents' mean age is 20.6 years, and the standard deviation is 1.7. *Race/ethnicity* is classified as White (individuals who identified as non-Hispanic White) (62%) and non-White (all other individuals) (38%), with White as the contrast category in the multivariate analyses. *Parent's education* is measured from the parent's questionnaire, which was completed primarily by mothers. We ask: "How far did you go in school?" If the father answered the questionnaire and was married or cohabiting, we ask: "How far did your partner go in school?" Responses are coded as 0 for 12 years of education or less (45%) and 1 for more than 12 years (55%).

Analytic Strategy

We first conduct a descriptive analysis that compares those who have gotten tested and those who have not within the context of the current or most recent sexual relationship, for women and men separately. Next, in multivariate analyses, we use logistic regression to estimate the odds of testing for HIV since being in a sexual relationship with this current or most recent partner, for women and men separately. We provide a baseline model that includes the demographic variables, and then estimate separate models for the individual characteristics, partner's risk behaviors and relational dynamics respectively. Our final model includes the full set of covariates. Lastly, we provide an analysis of narrative data in which respondents describe their reasons for getting or not getting tested. The interviews we elicited from a subset (n = 100) of the respondents accord with the survey questions, but provide additional explanation for testing decisions. We describe respondents using pseudonyms, age, and testing status.

RESULTS

Descriptive Analyses

Table 1 presents the weighted means and percentages for the dependent and independent variables. The TARS data are drawn from a stratified, random sample; thus, each respondent has a unique probability of inclusion. Survey weights are then calculated based upon the probabilities. This allows us to transform point estimates into values that are more representative of a national sample.

Forty-eight percent of the women in our sample have been tested for HIV since being sexually intimate with their current or most recent partner. Women who report being tested for HIV have similar attitudes, but score slightly lower on condom efficacy, relative to non-testers (4.0 versus 4.2, respectively). Women who have tested for HIV, on average, report a higher number of lifetime sexual partners compared with non-testers (6 partners versus 5, respectively). A higher percentage of testers (25%), relative to non-testers (13%), also report that their partners are not sexually exclusive, and that their partners, on average, have a higher number of lifetime sexual partners compared with non-testers (6 partners versus 4,

respectively). Women who have tested for HIV, relative to non-testers, report similar scores on the passionate love scale, but report lower scores when asked whether their partners can be trusted (3.5 versus 3.9, respectively). Forty-four percent of testers, relative to 34% of non-testers, report a power differential that favors them. Testers, on average, score higher when asked whether it is hard to talk about sexual matters with their partners (2.0 versus 1.8, respectively), and a higher percentage (36%) of testers relative to non-testers (6%) have had a pregnancy with this partner.

We find 30% of men have been tested for HIV while in their current or most recent relationship. Consistent with prior studies fewer men than women have been tested for HIV. Men who have tested for HIV within the context of their current or most recent relationship, on average, report more permissive attitudes than non-testers (3.3 versus 3.1, respectively), but have similar scores on the condom efficacy scale. A higher percentage of testers (34%), compared with non-testers (25%), report that they are not sexually exclusive, and on average, report a greater number of lifetime sexual partners (10 versus 7 partners, respectively). Male testers and non-testers have partners with similar numbers of prior sexual partners and are similar in reporting that their partners are not sexually exclusive. Testers report, on average, higher levels of romantic love than non-testers (3.9 versus 3.8, $p < .10$), but score similarly in terms of trust. Testers report, on average, less difficulty communicating about sexual topics relative to men who are not tested (1.9 versus 2.2, respectively). A higher percentage of men who are tested (21% versus 8%) report a pregnancy with this partner.

Taken together, findings at the bivariate level lead us to conclude that young women's own risk behaviors as well as their partners' risk behaviors are associated with HIV testing. In contrast, young men account for testing based on their own risk behavior. The relationship dynamics appear to operate differently regarding testing among men and women.

Multivariate Analyses: Women and HIV Testing

Table 2 displays the multivariate models of women's odds of HIV testing while in their current or most recent relationship. Model 1 includes the demographic indicators and shows that age has a modest positive effect on the odds of being tested for HIV. Additionally, non-White compared with White women are three times more likely to be tested, and women whose parents are more highly educated are less likely to be tested. Model 2 shows that when women's risk characteristics and demographic covariates are examined, the former are not associated with testing. Thus including women's risk characteristics does little to reduce the effects of race and parent's education on the odds of being tested for HIV. Thus, with regard to women, we did not find support for our expectation that the individual's behavioral risks would significantly correlate with HIV testing.

Model 3 presents the associations between partner's risk behaviors, demographic measures, and HIV testing. Consistent with our expectations, and the bivariate results, partner's sexual non-exclusivity and number of lifetime sex partners are positively associated with women's HIV testing net of demographic background. Race and parent's education remain significantly related to testing.

Relationship dynamics and demographic characteristics are included in Model 4. Consistent with bivariate results, mistrust, and difficulty communicating about sex are significantly related to testing; however, the effect of greater power in the relationship is no longer significantly related to testing. Examining the influence of the covariates reveals that including race in the model reduces the effect of greater power on HIV testing. This is likely due to the positive relationship between being non-White or Hispanic and reporting a relatively favorable power balance ($r = 0.15$; $p < .01$, results not shown). Sexual coercion, while not significantly related to testing at the bivariate level, is associated with significantly lower odds of being tested for HIV, net of demographic background. Further examination of the covariates reveals that when race is included in the model, the effect of sexual coercion on HIV testing becomes statistically significant. While non-White women report higher levels of sexual coercion in their relationships as reflected in the correlation of these variables ($r = 0.12$, $p < .01$, results not shown), the inclusion of an interaction term indicates that the impact of sexual coercion on HIV testing does not differ significantly for White and non-White women (results not shown). Additionally, women who experienced a pregnancy with this partner are seven times more likely to be tested for HIV. While the effect of race on the odds of being tested is reduced, it remains statistically significant, and parent's education continues to exert a modest negative effect on the odds of being tested.

Model 5 presents the results of the full model, which includes all three sets of variables and the demographic covariates. For women, partner's sexual non-exclusivity, sexual coercion and pregnancy with partner remain significantly associated with HIV testing. The partner's lifetime number of sex partners, mistrust, and sexual communication difficulty are no longer significantly related to testing once these other factors are taken into account. Further examination of the covariates reveals that controlling for trust reduces the effect of partner's prior number of sex partners on HIV testing. A Sobol test ($z = 2.48$; $p < .05$) supports the notion that women who believe that their partner has a high number of prior sexual partners demonstrate a lower degree of trust, and thus, are more likely to get tested. Yet trust is not significantly related to testing in the full model. This is largely due to inclusion of the partner's sexual non-exclusivity, which demonstrates a strong negative correlation with trust ($r = - 0.489$, $p < .001$). Consequently, the positive effect of having a partner who is not sexually exclusive, overrides the negative effect of trust on being tested. Examination of the covariates reveals that neither individual characteristics, nor partner risk behaviors alone, explain the lack of a statistically significant effect of sexual communication on HIV testing. Finally, non-White women continue to be significantly more likely to be tested for HIV, while those whose parents have higher education are less likely to be tested, net of respondent, partner and relationship characteristics.

These results highlight that among women, partner risk behaviors and relationship dynamics are of greater importance than individual risk characteristics in influencing the odds of HIV testing. We confirm this by conducting nested χ^2 tests comparing Models 2, 3, and 4 to Model 1. For Model 2 the nested χ^2 test is not significant indicating that including women's individual risk characteristics do not add to model fit. However, comparisons of Models 3 and 4 to Model 1 yield significant results ($\chi^2 = 9.47$, 2 *df*; $p < .01$ and $\chi^2 = 54.41$, 6 *df*; $p < .$

001 respectively) showcasing that partner's risk behaviors and relationship dynamics add to the fit of the model.

Men and HIV Testing

Model 1 in Table 2 shows how the demographic indicators are associated with the odds of men testing for HIV within the context of their current or most recent relationship. Similar to women, the demographic characteristics are significantly related to HIV testing. However, among men, age emerges as a stronger predictor compared to women. Model 2 includes men's individual risk and demographic characteristics. The relationships between permissive attitudes, sexual non-exclusivity and HIV testing shown in the bivariate analyses are no longer statistically significant once the individual risk and demographic characteristics are included. Men's lifetime number of sex partners continues to be significantly associated with increased odds of being tested for HIV, as do the demographic variables. Consistent with the bivariate results, Model 3 shows that partner's lifetime number of sex partners and partner sexual non-exclusivity are not positively related to the odds men are tested for HIV. In Model 3 age, race and parent's education remain significantly associated with being tested for HIV.

Model 4 includes the relationship and demographic variables. The bivariate associations between men's feelings of romantic love, and lack of difficulty communicating about sex are no longer significantly related to testing. An examination of the covariates reveals that including the relationship variables as a block accounts for the diminishment of the effects of these variables on the odds of getting tested. Pregnancy with partner is significantly associated with increased odds of being tested, but is a weaker influence among men than women. Demographic characteristics yield results similar to those in the previous models.

Model 5 includes men's individual characteristics, partner's risk behaviors, relationship dynamics and demographic controls. The findings in Model 5 are similar to those reported in the earlier models. Men who report higher numbers of lifetime sex partners have higher odds of testing for HIV. Pregnancy remains related to HIV testing. Age, race and parent education are significantly associated with the odds of being tested for HIV.

These results show that men are less reliant on the relationship context to inform them of their need to be tested for HIV. Rather it appears men rely on their personal sexual history to inform them on the need to seek HIV testing. Again, this is confirmed by conducting nested χ^2 tests, which reveal a significant result for only Model 2 ($\chi^2 = 9.57$, 4 *df*; $p < .05$). Thus, individual risk adds to the model fit. Among men, their partner's characteristics and most relationship dynamics do not significantly contribute to model fit.

A Qualitative Lens on Intimate Relationships and HIV Testing

Consistent with the quantitative results, the women who participated in the in-depth interviews were more likely to be tested than their male counterparts. In addition, and consistent with the quantitative results, women we interviewed were not averse to mentioning a partner's extensive sexual history, and sometimes did appear to connect this

directly to their testing decisions. As Ana, a 21 year old , suggested: “David, he’s been with a lot, I know that. And that was like a lot of the reason where um, I did get testing done...”

While women’s narratives emphasized their partners’ past experiences, men’s narratives often focused on their being good judges of character, which, they believed, worked to diminish their risk of exposure to HIV. For example, Jordan, 21 years old, described his girlfriend Andrea, and the reasons he did not need to be tested:

> I know she didn’t even have sex until last year. I mean, it’s still not a sure thing but, like her parents are so strict, yeah, like they’re the “you’re not having sex until you get married.” Like real strict, like there are no thongs going through the washer in that place, put it that way. It still doesn’t mean anything, but, I don’t know, she had one boyfriend. I just knew that I was clean.

Another gendered pattern is that some men appeared to rely on testing-by-proxy, recognizing that women are likely to have more routine access to health care; and, consistent with the quantitative results (i.e., positive effect of pregnancy status) testing may occur in connection with women’s sexual health and prenatal care. Daniel, age 23, references his partner’s visits to obtain birth control in connection with his own decision not to get tested:

> “But I mean she did (get tested), because she had to get put on birth control so… I didn’t… I guess I take it for granted that I’m fine. I’m pretty sure I am…”

Such references may suggest that the female partner’s test results provide a convenient way for some men to assess their own HIV status, but this strategy does, nevertheless, encompass assessments of the character of the partner with whom the individual is involved:

> [Interviewer: Did you ever get tested?] No. She does. [Interviewer: So you rely on her test. So she doesn’t come up positive then you know…?] I am not (positive). Exactly. [Interviewer: That would be kind of after the fact wouldn’t it?] Yeah, I guess [but] I am not sleeping with whores.

Thus, in the above example, the respondent’s willingness to rely on second hand reports that his partner provides involves a characterization about her trustworthiness and feelings of confidence that she has not had recent unprotected sex with other partners.

One problem with relying on these routine testing situations for women and their partners is that it is not always clear when respondents are referencing testing for STDs in general and HIV specifically (e.g., Anderson & Blake, 2011). It is possible that respondents who are going in for routine examinations and having blood work performed are assuming they are being tested for HIV when they are not (Sobo, 1994). When asked whether they have been tested for HIV, some female respondents will simply state: “I get regular exams.”

The vagueness of these details of testing may reflect tensions that arise around the prospect of being tested, either from a fear of receiving positive test results (Spielberg, Kurth, Gorbach, & Goldbaum, 2001), or fear of a partner’s reaction. As suggested above, gendered power dynamics that compromise women’s ability to successfully negotiate condom use (Rosenthal & Levy, 2010), may also constrain conversations revolving around the issue of HIV testing. As romantic relationships evolve, individuals may become more motivated to

protect the relationship from conflict that occurs as a result of bringing up the subject of HIV testing, even at the expense of self-protection (Misovich et al., 1997). The bivariate results showed that women who reported a more favorable power balance were significantly more likely to be tested, although these results were not significant in the full model. Reports about coercive sex were not significantly related to testing at the bivariate level, but this variable was significant in the full model (female results only). Although these results are thus far from definitive, such findings combined with comments within the longer narratives highlight the need for more research on conflicts and power dynamics and their association with testing behaviors within the context of a given intimate relationship. For example, Susie, a 22 year old respondent who had not been tested, noted that this topic was indeed associated with prior conflict with her partner:

> It was probably in the back of mind if he had been tested and if he had been with girls who had something… I started to get into a conversation with him and he absolutely took it the wrong way…

One contribution of combining qualitative and quantitative results is that they document correlates of testing behavior within the context of a specific relationship, rather than the more typical strategy of assessing only whether an individual has ever been tested. However, this focus on a current or most recent relationship may overstate the notion that male respondents are not as likely to take partner characteristics or relationship features into account. Donnie, a 19 year old respondent, got tested because of his former girlfriend's behavior:

> And the HIV and STD test I get done. And, just to make sure. Because my ex-girlfriend, I had found out after we split up, her sex history, and it was not good. She had been around the block more than once. And that made me feel a little bit funny. So I just got tested, just to make sure.

The longer narratives are thus also useful because they highlight that experiences involving *past* partners may be associated with testing behaviors, and are thus part of the package of concerns that individuals bring with them as they forge the next relationship.

DISCUSSION

Although the benefits of detecting and treating HIV early are widely recognized, knowledge of facilitators that encourage and obstacles that deter HIV testing among young adult heterosexual men and women in the U.S. is limited. Overall, 40% of respondents were tested for HIV since being with their current or most recent partner; and women were significantly more likely than men to get tested (48% versus 30%, respectively). Our estimates are consistent with other studies (e.g., Arrington-Sanders & Ellen, 2008), which find that a higher percentage of women than men get tested for HIV. Our findings are also consistent with prevalence rates for women in the NSFG (Trepka & Kim, 2010), and are consistent with but higher than prevalence rates based on wave III of the Add Health, which show that about 23% of sexually experienced women aged 18 - 27 reported HIV testing in the past year (Hahm et al., 2009). Differences with the Add Health are likely due to the distinction between getting tested in the past year versus getting tested within the context of one's most

current or most recent intimate relationship, which can extend to the prior 24 months. Our study showcases the value of querying about testing within a specific relationship.

The indicators associated with HIV testing differ among men and women. Our findings are in accord with prior work on health behaviors by indicating that permissive attitudes among men and efficacy among women are related to being tested. However, these factors are not the most important predictors of whether men and women get tested. While individual factors such as permissive attitudes and condom efficacy may play a role in condom use generally, which is an important sexual health behavior, in our sample of heterosexual couples these factors seem to have little effect on HIV testing within relationships. As expected, among both men and women pregnancy with their partner is associated with greater odds of testing which is most likely tied to increased interactions with reproductive health services. Notably, pregnancy in their current or most recent relationship is relatively rare (22% of women and 12% of men) indicating that only a subset of women and men experience the positive effects of pregnancy on testing. Even among those experiencing a pregnancy within their current or most recent relationship, 15% of women and almost half of men were not tested for HIV.

A primary factor that predicts HIV testing among men is their own number of lifetime sexual partners. These are not specific to the relationship and simply present an assessment of men's own sexual risk portfolio. Consideration of the respondents' full romantic histories provide a more nuanced perspective suggesting that men do take relationship features into account, albeit in a somewhat different manner. The qualitative evidence showcases that men rely on their own, sometimes inaccurate, judgments about their partner's risk level. Additionally, men appeared to rely on women getting tested to assess their own HIV status. One problem with relying on these routine testing situations for women and their partners is that it is not always clear when respondents are referencing testing for STDs in general and HIV specifically (Anderson & Blake, 2011). Yet, individuals' assessments of personal risk are often based on myths and misperceptions or what has been referred to as "folk constructions" (Essien, Meshack, & Ross, 2002). As noted by Essien and colleagues, a prime example of a folk construction is assuming that information provided by one's partner with respect to previous sexual activities or simply observations that she is "clean" or a "good girl" is sufficient to correctly judge levels of risk.

These results seem to suggest that men are less reliant on the relationship context to inform them on the need to be tested for HIV. It appears from these analyses that men rely more on their own personal sexual histories to inform them on the need to seek HIV testing. In contrast, women's testing decisions appear to rest on their assessments of their partner's sexual exclusivity and partner's sexual experience. The qualitative analysis confirms these findings and demonstrates through women's narratives their emphasis on their partners' past experiences. These findings are consistent with the gender vulnerability approach.

An important focus of this paper was the attention to relationship dynamics. While relationship dynamics are not the central factors associated with testing, we observed some gender specific associations, which may deserve additional research scrutiny. Women with greater power, higher mistrust scores, and greater difficulty communicating about sex report

higher odds of testing. In contrast, men who report greater love and less difficulty communicating about sexual topics experience lower odds of testing. Thus, the associations between relationship factors and testing appear to be operating in almost opposite manners for men and women. These distinct relationship patterns suggest that further attention to couple-level analyses may help elucidate the meaning of these relationship dynamics among men and women.

Our study has several limitations. It is possible that HIV testing occurred prior to measurement of some of the independent variables. For example, if an HIV test was negative, perhaps this increased an individual's sense of trust. In our qualitative data, this point was expressed by Jason, an 18 year old respondent, in the following manner:

> Sarah, yea me and Sarah were the ones that went down and got tested together… Just I, I mean I knew who she was. I knew I mean I just, basically after me and (previous partner) you know after she kind of messed around on me like that, trust with women wasn't exactly high at the time so I just made sure we both went down there…"

Our findings represent important associations and as with all cross-sectional research, statistical associations need to be interpreted carefully and need to give attention to other possible interpretations. Another limitation is that our study is not representative of individuals who are at high risk of HIV. An asset is that we present a representative sample of young adults but more refined analyses of young adults facing high HIV risk are warranted. Our research is also limited by using self-report data which may be under-estimating HIV testing. Research that triangulates self-report and clinic based data would help to assess potential biases in our findings. Finally, certain factors not assessed in our study may be important to consider for assessing barriers and facilitators to HIV testing. For example, our study did not assess whether individuals were aware of significant others who may have tested positive for HIV (Bond et al., 2005). These factors merit continued attention in future research.

The study is important for reporting findings on HIV testing practices from a representative sample of young adult men and women in current or recent intimate relationships. Although prior research has described demographic characteristics and the influence of individuals' own risk behaviors, our work provides a key first step toward understanding the motivations to get tested that emanate from the influence of the partner's risk behavior or that are associated with qualities of the relationship itself, such as power differences. Our work also highlights the importance of a gender specific lens on assessments of HIV testing.

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Table 1

Means and Percentages for All Unmarried Respondents by Gender (N = 704)

	FEMALES (n=394)		MALES (n = 310)	
	HIV Test Since w/Partner		HIV Test Since w/Partner	
	Yes (48%)	No (52%)	Yes (30%)	No (70%)
Individual Characteristics				
Permissive attitudes	2.6	2.6	3.3*	3.1
Condom efficacy	4.0†	4.2	3.8	3.8
Not sexually exclusive	16.9%	13.2%	34.3%†	24.7%
Lifetime number of sex partners	6.0†	4.8	9.5***	6.6
Partner Risk Behaviors				
Partner's number of sex partners	5.5**	4.1	2.7	2.6
Partner not sexually exclusive	25.4%**	12.6%	14.5%	18.6%
Relationship Dynamics				
Romantic love	4.1	4.1	3.9†	3.8
Trust	3.5**	3.9	3.9	3.8
More power	44.2%*	34.1%	17.7%	21.6%
Difficulty communicating	2.0*	1.8	1.9†	2.2
Sexual coercion	1.4	1.4	1.6	1.5
Pregnancy w/partner	36.1%***	6.1%	20.7%**	7.8%
Demographic characteristics				
Age	20.5	20.3	21.1**	20.4
Race				
White non-Hispanic	36.7%***	63.3%	20.7%***	79.3%
Non-White/Hispanic	66.8%***	33.2%	40.3%***	59.7%
Parent's Education				
High school graduate or less	54.7%**	45.3%	38.1%***	61.9%
Some college/college degree	41.7%**	58.3%	21.2%***	78.8%

Source: Toledo Adolescent Relationships Study

Note: Significance levels based on zero-order logistic regression

Table 2

Odds Ratios for the Logistic Regression of Tested for HIV Since with Partner among Unmarried Women (N = 394)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	e^b	*SE*	e^b	*SE*	e^b	*SE*	e^b	*SE*	e^b	*SE*
Intercept	0.08†	1.29	0.26	1.47	0.08†	1.31	0.06†	1.55	0.15	1.82
Individual Characteristics										
Permissive attitudes			0.82	0.18					0.73	0.21
Condom efficacy			0.91	0.10					0.98	0.11
Not sexually exclusive			0.89	0.31					0.66	0.41
Lifetime number of sex partners			1.04	0.03					1.04	0.03
Partner Risk Behaviors										
Partner's number of sex partners					1.05*	0.03			1.04	0.03
Partner not sexually exclusive					1.82*	0.29			2.29†	0.45
Relationship Dynamics										
Romantic love							1.30	0.17	1.21	0.18
Trust							0.81*	0.10	0.92	0.12
Power										
(Same/less power)										
More power							1.33	0.24	1.34	0.24
Difficulty communicating about sex							1.28†	0.13	1.23	0.13
Sexual coercion							0.75*	0.13	0.70**	0.14
Pregnancy w/partner							7.04***	0.35	7.10***	0.36
Demographic characteristics										
Age	1.12†	0.06	1.09	0.06	1.10	0.06	1.10	0.07	1.07	0.07
Race/Ethnicity										
(White non-Hispanic)										
Non-White/Hispanic	3.02***	0.22	2.97***	0.22	2.69***	0.22	2.09**	0.24	1.97**	0.25
Parent Education										
(12 years or less)										

	Model 1		Model 2		Model 3		Model 4		Model 5	
	e^b	*SE*	e^b	*SE*	e^b	*SE*	e^b	*SE*	e^b	*SE*
More than 12 years	0.57**	0.21	0.58*	0.22	0.58*	0.22	0.67†	0.23	0.66†	0.24
Likelihood Ratio χ^2	39.84***		43.68***		49.31***		94.25***		103.30***	

Note: The omitted category is in parentheses. Source: Toledo Adolescent Relationship Study.

† p < .10.

* p < .05.

** p < .01.

*** p < .001.

Table 3

Odds Ratios for the Logistic Regression of Tested for HIV Since with Partner Among Unmarried Men (N = 310)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	e^b	*SE*	e^b	*SE*	e^b	*SE*	e^b	*SE*	e^b	*SE*
Intercept	0.00***	1.75	0.00**	1.96	0.00***	1.77	0.00***	1.99	0.00***	2.35
Individual Characteristics										
Permissive attitudes			0.97	0.24					1.17	0.26
Condom efficacy			1.04	0.12					1.02	0.12
Not sexually exclusive			0.74	0.34					1.03	0.39
Lifetime number of sex partners			1.08**	0.03					1.08**	0.03
Partner Risk Behaviors										
Partner's number of sex partners					1.01	0.05			0.96	0.06
Partner not sexually exclusive					0.68	0.38			0.69	0.46
Relationship Dynamics										
Romantic love							1.31	0.19	1.34	0.21
Trust							1.12	0.13	1.15	0.14
Power										
(Same/less power)										
More power							0.88	0.36	0.73	0.38
Difficulty communicating about sex							0.78	0.16	0.76	0.17
Sexual coercion							1.10	0.12	1.11	0.12
Pregnancy w/partner							2.45*	0.39	2.34*	0.41
Demographic characteristics										
Age	1.32***	0.08	1.28**	0.08	1.30**	0.08	1.31**	0.09	1.26**	0.09
Race/Ethnicity										
(White non-Hispanic)										
Non-White/Hispanic	2.66***	0.27	2.39**	0.29	2.71***	0.27	2.56***	0.28	2.09*	0.30
Parent Education										
(12 years or less)										

	Model 1		Model 2		Model 3		Model 4		Model 5	
	e^b	*SE*	e^b	*SE*	e^b	*SE*	e^b	*SE*	e^b	*SE*
More than 12 years	0.47**	0.27	0.46**	0.27	0.46**	0.27	0.49*	0.28	0.49*	0.29
Likelihood Ratio χ^2	38.03***		47.60***		39.09***		50.09***		62.14***	

Note: The omitted category is in parentheses. Source: Toledo Adolescent Relationship Study.

† p < .10.

* p < .05.

** p < .01.

*** p < .001.