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Personal or relational? Examining sexual health in the context of HIV serodiscordant same-sex male couples

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Abstract

Couples' ability to adopt a "we" orientation has been associated with optimal health outcomes. This study examined how personal and relational motivations are uniquely associated with unprotected anal intercourse (UAI), protected anal intercourse (PAI), and the absence of sexual activity within HIV-serodiscordant same-sex male couples. HIV-positive men and their HIV-negative partners (n = 116 couples, 232 men) completed questionnaires and HIV-positive men had blood drawn for viral load. Results of a multinomial logistic regression illustrated that sexual satisfaction was positively associated with PAI among HIV-negative partners and negatively associated with PAI among HIV-positive partners. Endorsing a "we" orientation was positively associated with PAI among HIV-positive partners. Findings suggest that HIV-positive partners who espouse a "we" orientation may be willing to forgo their personal interests to protect their HIV-negative partners from HIV transmission. Couples-based interventions are warranted to help strengthen relationship dynamics to enhance the sexual health of serodiscordant couples.

INTRODUCTION

In the fourth decade of the HIV epidemic, approximately 2.7 million people worldwide become newly infected each year (1). In the U.S., gay, bisexual and other men who have sex with men (MSM) represent the only risk group for whom the rates of new infections continue to increase annually (2). Researchers and service providers have increasingly noted the limited success of individual-level HIV prevention interventions, and called for research that examines the social, relational and structural contexts that sustain risk behavior or promote optimal health behaviors (3–5). As a large proportion of HIV risk behavior occurs within the context of primary romantic relationships (6–12), researchers have sought to examine how relationship dynamics contribute to risk behaviors, both within and outside the primary partnership among same-sex male couples (13–15). Intradynamic (within the couple) sexual risk behaviors are of particular concern for partners of serodiscordant status (where one partner is HIV-seropositive and the other is HIV-seronegative). For these couples, engaging in unprotected anal intercourse (UAI) can result in HIV transmission if the viral load of the HIV-positive partner is detectable, and the risk is particularly high if the HIV-negative partner is receptive (16–18). As such, serodiscordant couples may experience heightened dyadic stressors as a result of the possibility of HIV transmission, in addition to

typical illness-related stressors around medication adherence, illness intrusions, and fears and uncertainty.

Among couples affected by chronic illness, a supportive romantic relationship may protect and buffer against social and psychological stressors that give rise to poor mental and physical health outcomes (19). However, the research literature suggests that each partners' perceptions of relationship quality are an important and independent predictor of optimal coping efforts and positive health outcomes, over and above the presence of general perceived social support (19, 20). Extensive research demonstrates strong associations between relationship quality and the quality of a couple's sex life (21–24). Studies suggest that on average 51% of people living with HIV report sexual problems, including sexual dissatisfaction (25). Further, it has been documented among couples affected by chronic illness that partners' experiences of sexual dissatisfaction may influence one another (26). These findings are particularly important as researchers have posited that having both pleasurable and safe sexual experiences is integral to fostering physical and mental health (27).

Existing studies have examined each partner's individual motivations and perceptions to explain sexual risk behavior. Many individuals describe unprotected sex as arising out of a personal motivation to obtain sexual pleasure, as well as to show love, intimacy, commitment, and trust to their partner (28–32). However, couples also describe HIV transmission concerns as a major source of stress that may impact each partner's perception of sexual satisfaction (33–36). In addition, condom use has been reported as a constant reminder of a couple's serodiscordant status, with condom use being suppressed in order for each partner to avoid discussing or thinking about fears of illness progression and transmission risk (33, 34, 37). HIV-positive individuals also report fears of transmitting the virus to their partners even when they engage in safer sex behaviors (35, 38, 39). Recent research has found that serodiscordant couples with high levels of attachment are at increased odds of engaging in intradyadic sexual risk behavior (40). These findings suggest that not using a condom, despite the risk of HIV transmission, may be motivated by one or both partner's need for closeness or insecure attachment style as opposed to a desire for both closeness and autonomy (30, 41, 42).

Among heterosexual serodiscordant relationships, recent clinical trials have demonstrated that antiretroviral therapy (ART)-mediated virologic suppression reduced the risk of HIV transmission by 96% between partners (43–45). While the efficacy of these trials has not yet been demonstrated among MSM couples, studies suggest that for some time HIV-negative men have factored their HIV-positive partners' viral load into decisions about whether or not to engage in unprotected anal intercourse (UAI) with their HIV-positive partners (46). Studies have found no association between either undetectable viral load or ART use and UAI among HIV-positive persons (46). However, HIV prevention researchers have suggested that seroadaptive behaviors, such as strategic positioning and serosorting in which a partner chooses a sexual partner of the same HIV serostatus, may be driven in part by "prevention altruism" among HIV-positive MSM to keep their HIV-negative partners negative (47, 48).

There is a growing body of research within other health domains that suggests couples who are able to adopt a "we" orientation in relation to illness demonstrate greater resiliency and an increased capacity to cope with stressors (19, 20, 49). Similarly, Lewis and colleagues (50) expanded upon Interdependence Theory (51), positing that health-enhancing behaviors arise out of *transformation of motivation*, which involves a movement away from a self-interest focus to consider long-term relational goals that promote both one's own and one's partner's well-being. Within the social psychological literature, Interdependence Theory

proposes that the nature of transformation processes are shaped in part by *cognitive interdependence* – whereby each individual comes to think of their partner as part of the self, and regards themselves as part of a collective unit that includes the partner (52, 53). Thus, Interdependence Theory would propose that from a motivational point of view, perceiving another’s relationship goals and identities as one’s own may mean that the outcome the other incurs is to some extent also experienced as one’s own, resulting in beneficial health outcomes (i.e., engaging in protected anal sex means keeping one’s partner HIV-negative regardless of one’s immediate interests).

To date, investigations into the sexual health of same-sex male couples in serodiscordant relationships have not simultaneously examined whether intradyadic anal sexual behavior is associated with personal factors (i.e., sexual satisfaction) or relational factors (i.e., endorsing cognitive interdependence or a “we” orientation) for both partners in the relationship. As a preliminary step to better understanding personal versus relationship motivations and safer sexual behaviors, the goals of this study were to (1) examine whether each partner’s perceptions of sexual satisfaction was differentially associated with anal sexual activity within same-sex male couples in serodiscordant relationships, and (2) determine whether endorsing a “we” orientation was associated with engaging in protected anal sexual activity. We used paired data from both partners of same-sex male couples ($N = 116$ couples) to examine differences in sexual satisfaction, virologic control, autonomy, cognitive interdependence, and intradyadic sexual behavior.

METHODS

Study Population and Procedures

Data are from a cross-sectional phase of a larger study examining the association between relationship dynamics and antiretroviral medication adherence among same-sex male seroconcordant positive and serodiscordant couples where at least one partner is HIV-positive and taking antiretroviral medications (54). All study procedures were reviewed and approved by the Committee on Human Research, the Institutional Review Board (IRB) at the University of California, San Francisco.

Couples were recruited in the U.S. San Francisco Bay Area using passive recruitment methods and participant and provider referrals. Couples who called the study were screened separately for eligibility criteria, and eligible participants were scheduled for an in-person interview at the research center. Both partners were required to attend the appointment together, but were consented and assessed separately. To be eligible for the parent project, both partners must have reported each other as their primary partner, defined as “someone to whom you feel committed above anyone else and with whom you have had a sexual relationship.” At least one partner in each couple was HIV-positive and on an acknowledged ART regimen for at least 30 days. In addition, participants were: (1) at least 18 years old; (2) born male and currently identified as male; (3) English speaking; and (4) able to provide informed consent. Between January 2009 and September 2012, surveys were administered with a combination of Computer Assisted Personal Interviewing (CAPI) and Audio Computer Assisted Self Interviewing (ACASI) procedures. In response to recruitment efforts, 898 individuals called the study screening line and agreed to be screened, with 526 (58.6%) men meeting the study’s basic eligibility criteria. Analyses include 232 (44.1%) men constituting 116 serodiscordant couples who completed baseline interviews collected by September 2012.

Measures

Demographics—Participants reported their age, sexual identity, race and ethnicity, HIV serostatus (positive or negative), education level and income level. Participants also provided the duration of the primary relationship (in years) and length of time living with HIV (in years).

Sexual Satisfaction—Sexual satisfaction was measured using 4 items, including, “How satisfied are you with your sexual relationship with your partner in general?”, “How satisfied are you with the frequency of sexual activities you engage in with your partner?”, “How satisfied are you with the variety of sexual activities you engage in with your partner?”, and “How satisfied are you with the amount of physical affection expressed in your relationship? By 'physical affection' we mean touching each other affectionately like holding hands, hugging, massaging each other or kissing but where you do not become sexually aroused.” Participants responded using a Likert-type scale (1 = *Extremely Dissatisfied*; 6= *Extremely Satisfied*), and total scale scores ranged from 4 to 24. A principal components analysis was conducted to determine the structure of these four items (55). Results suggested the items originated from a single component that accounted for 69.2% of total variance across the four items. The sexual satisfaction scale demonstrated good overall internal consistency and reliability in both study samples of HIV-positive and HIV-negative men ($\alpha = 0.84$), with individual item to total correlations ranging from 0.57 to 0.92.

Cognitive Interdependence—The Inclusion in Other Scale (IOS) assesses cognitive fusion of partner with self and is composed of seven Venn diagrams representing varying degrees of overlap; one circle is labeled as representing the self, the other circle is labeled as representing the other (or relationship partner) (56). Participants are asked to select the diagram which best describes their relationship in general. Responses range from 1 (completely separate, non-overlapping circles) to 7 (completely overlapping circles). Higher scores indicate greater cognitive interdependence, a mental representation of the self-in-relationship (53).

Autonomy—A modified version of Kurdek’s autonomy scale (57) contains 5 statements about the individual or couple’s relationship ($\alpha = 0.74$) and participants were asked to indicate their level of agreement on a Likert scale ranging from 1 (Not At All True) to 9 (Extremely True). Higher scores indicate greater feelings of individual autonomy.

Virologic Control—Trained phlebotomists using standard techniques obtained blood for plasma HIV RNA viral load during the assessment visit. The viral load test was performed using the COBAS_ AmpliPrep/COBAS@TaqMan@HIV test kit (Roche Molecular Systems, Inc.), which has a threshold for undetectability of 20 copies/ml. Viral load was dichotomized as undetectable versus detectable.

Depressive Symptoms—The Center for Epidemiologic Studies Depression Scale (CES-D) was administered to measure depressed mood in the past week. The CES-D consists of 20 items rated on a 4-point scale according to how frequently they were experienced in the previous week ($\alpha = 0.91$). CESD scores were dichotomized at 16 clinical cut off (58, 59).

Sexual Behavior—Sexual behavior during in the previous three months was assessed using four items. Two items assessed whether or not the participant engaged in insertive and receptive anal sex with their main partner (“yes/no” response). Two subsequent items assessed how often condoms were used during insertive and receptive sex (“never,” “sometimes,” “half of the time,” “most of the time,” “every time”). Couples were identified as engaging in “unprotected anal intercourse (UAI)” if either partner reported anal sex and

condoms were not used every time. Likewise, couples were identified as engaging in “protected anal intercourse (PAI)” if either partner reported anal sex and condoms were used every time. Couples who did not engage in sexual activity with one another were classified “no sexual activity.” Couple-level agreement with regard to the occurrence of individual types of anal sex was high. Partners agreed about the occurrence of sexual activity in 99.7% of couples. Results for condom use were similar, with partners agreeing in 99.4% of the couples. In 5 couples, HIV positive partners reported a higher level of sexual risk, while in 1 couple, the HIV negative partner reported higher levels of sexual risk.

Statistical Analysis

HIV serodiscordant couples represent distinguishable dyads. That is, within each couple, partners differ with regard to HIV status and HIV status has potentially meaningful implications for the theoretical constructs examined. In such cases, Pearson’s product-moment correlations may be used to assess the relationship between HIV-negative and HIV-positive partners’ scores on a particular continuous variable (60). Non-significant values of Pearson’s correlation coefficients indicate that the responses of one partner were unrelated to those of the other, while statistically significant values indicate significant similarity (dependence) between partner scores (60); however, guidelines for the assessment of consequential dependence have been discussed in terms of the intraclass correlation (ICC) (61). Similar to Pearson’s r , the ICC values range between -1 and $+1$ (in the case of dyads). An ICC of zero implies that two members of the same couple are no more similar to one another than two members of different couples are. An increase in the absolute value of the ICC implies that the partners’ responses are increasingly similar to (or dissimilar from) one another. An ICC of 1.0 indicates that members of the same couple responded identically. Cohen’s Kappa is an analogous measure of association for dichotomous variables; its interpretation is identical to that of the ICC coefficient (60). To examine relationships among the major study variables, ICC’s and Cohen’s Kappa’s were calculated separately for HIV-positive and HIV-negative partners.

The associations among couples’ sexual behavior and partners’ reports of sexual satisfaction and IOS were tested using multinomial logistic regression. The primary outcome variables (UAI or PAI) exist at the couple-level. That is, both members of the couple share the same value on the outcome. This couple-level outcome was operationalized to have three unordered categories: (1) no anal sex, (2) protected anal sex only, (3) unprotected anal sex, which were regressed onto positive and negative partners’ reports of sexual satisfaction and IOS scores. Couples who engaged in UAI served as the referent category. All models accounted for the age and autonomy scores of both the HIV-positive and HIV-negative partner, the HIV-positive partner’s viral load and years living with HIV, as well as relationship length. Models containing race, income, and depressive symptoms as additional covariates were also tested and results did not differ substantively. For each multinomial regression effect, we report the odds ratio (OR), representing the change in odds of the outcome relative to the reference group per unit change in the independent variable, the 95% CI for the odds ratio, the standardized beta (β) representing the change in the odds of the outcome relative to the reference group per standard deviation change in the independent variable, and the p-value testing the null hypothesis that the odds ratio = 1.00 (i.e., the null hypothesis of no association).

RESULTS

Demographics

The sample was largely middle-aged ($M = 46.70$; $SD = 10.96$) and self-identified as white (61.6%). Slightly less than half of the sample reported earning less than \$20,000 annually

(40.5%). Overall, HIV-positive men earned less than HIV-negative men. The average mean length of time since HIV-positive diagnosis was 13.54 ($SD = 8.01$) years and the average mean length of relationship was 90.40 ($SD = 93.54$) months. Finally, 73 (62.9%) of the HIV-positive partners had an undetectable viral load as confirmed by the plasma HIV RNA viral load test.

As shown in Table 1, there was considerable dependence in income, age, sexual satisfaction and IOS. With regard to sexual behavior, 32 couples (27.6%) reported engaging in PAI in the past 3 months, 34 couples (29.3%) reported engaging in UAI in the past 3 months, and 50 couples (43.1%) reported not engaging in any anal sex activity with their partner in the past 3 months.

Individual and Relational Factors

As shown in Table 2, a multinomial regression was conducted to explain sexual behavior category (i.e., no AI, PAI, or UAI) membership from the independent variables listed previously. The three-category outcome was regressed on the couple's relationship length, the HIV-positive partner's viral load and length of time living with HIV, both partners' age, IOS, sexual satisfaction, and autonomy scores. The fitted model represented a significant improvement over the null model (Log-likelihood $\chi^2(22) = 86.83$; $p < 0.001$) and correctly classified 67.2% of the cases. Sexual satisfaction scores of HIV-positive partners differentiated those who engaged in PAI from those who engaged in UAI. HIV-positive partners' perceptions of sexual satisfaction were negatively associated with the occurrence of PAI (OR = 0.85; 95% CI = 0.75, 0.97; $\beta = -0.16$; $p = 0.017$); whereas, HIV-negative partners' perceptions of sexual satisfaction scores were positively associated with the occurrence of PAI (OR = 1.15; 95% CI = 1.02, 1.30; $\beta = 0.14$; $p = 0.025$). HIV-positive partners who endorsed higher levels of autonomy were also at increased odds of engaging in protected sex (OR = 1.11; 95% CI = 1.02, 1.20; $\beta = 0.10$; $p = 0.01$), however, viral load suppression was not significantly associated with the occurrence of PAI. Importantly, HIV-positive partners who endorsed higher scores on the IOS scale were at increased odds of engaging in protected sex (OR = 1.52; 95% CI = 1.04, 2.23; $\beta = 0.42$; $p = 0.032$). Coefficients for relationship variables are provided in Table 2. With regard to covariates, age was not associated with PAI, nor was relationship duration or length of time living with HIV.

Several predictors differentiated couples who engaged in no anal sex from those who engaged in UAI and PAI. HIV-positive partners' perceptions of sexual satisfaction were negatively associated with abstinence from anal sex, compared with those who engaged in UAI (OR = 0.86; 95% CI = 0.75, 0.98; $\beta = -0.15$; $p = 0.019$). With regards to covariates, age of HIV-negative partners was positively associated with not engaging in any anal sex, compared with UAI (OR = 1.20; 95% CI = 1.09, 1.32; $\beta = 0.18$; $p < 0.001$) and PAI (OR = 1.17; 95% CI = 1.07, 1.01; $\beta = 0.15$; $p = 0.001$). Relationship length was positively associated with not engaging in any anal sex, compared with UAI (OR = 1.01; 95% CI = 1.0002, 1.02; $\beta = 0.01$, $p = 0.046$) and PAI (OR = 1.01; 95% CI = 1.003, 1.02; $\beta = 0.01$, $p = 0.014$). There were no other relationship variables or covariates associated with not engaging in anal sex, compared with UAI or PAI.

DISCUSSION

This is one of the first quantitative studies to explore how personal and relationship factors are differentially associated with intradyadic sexual risk behavior in a diverse sample of HIV serodiscordant same-sex male couples. We found that HIV-positive partners who endorsed higher cognitive interdependence scores were at increased odds of engaging in PAI, compared with UAI. Moreover, HIV-positive partners' autonomy scores were positively

associated with engaging PAI, compared with UAI, suggesting that cognitive interdependence is not simply a need for closeness or indicative of an insecure attachment style (41, 62, 63). Consistent with previous findings (47, 48), our results suggest that some HIV-positive partners may forgo immediate sexual gratification for the long-term benefit of their partner's health and the relationship. As such, these findings provide preliminary evidence for transformation of motivation processes among HIV-positive partners, suggesting that espousing a "we" orientation may motivate engaging in health-enhancing behaviors, over and above personal motivations (50).

In bivariate analyses, partners' sexual satisfaction score were positively correlated within couples. However, results of the multinomial logistic regression showed that HIV-positive partners' sexual satisfaction scores were negatively associated with the occurrence of PAI and no AI; whereas, HIV-negative partners sexual satisfaction scores were positively associated with engaging in PAI. Importantly, viral load suppression was not significantly associated with the occurrence of any anal sexual activity. These findings suggest there may be additional paths for exploring discrepancies in appraisals of sexual satisfaction for men in serodiscordant relationships. Qualitative studies have found that condoms can be a reminder for HIV-positive partners of their serostatus that may lead to feelings of shame and negative self-worth (34, 64), suggesting that internalized stigma may play a role in HIV-positive partners' perceptions of sexual satisfaction (65). The literature on altruistic motivations suggests that "prevention altruism" may lead to increased feelings of self-worth and self-esteem (47, 66). However, earlier prevention messages traditionally placed the responsibility on HIV-positive men to protect their sexual partners (67) and may have further stigmatized HIV-positive individuals' sexuality. Thus, future research is warranted to examine the influence of HIV stigma on both members of the serodiscordant couple and how these processes shape relationship functioning and sexual health.

Our findings suggest that personal and relational factors are both relevant to the sexual health of same-sex male couples in serodiscordant relationships. However, there may be an important concession made by HIV-positive partners when espousing a "we" orientation such that they engage in safer sexual practices to protect their partner from HIV acquisition but may not feel satisfied with these experiences. As a result of sexual dissatisfaction, one or both partners may engage in sexual risk behavior with outside partners. This relational dynamic is particularly noteworthy as much of the existing research on gay male couples and HIV transmission has attributed incidence rates to UAI with outside partners (11). Dyadic coping models emphasize aspects of the relational and social context that permit optimal dyadic coping strategies, such as open communication, mutual support, and joint problem solving (19). As sexual health may be integral in promoting physical and mental health (27), future research is warranted to illuminate the ways in which relationship dynamics and social factors such as HIV stigma influence dyadic coping strategies, and in turn, may impede or enhance the sexual health of both partners in serodiscordant couples.

We acknowledge limitations to the current study. This study relies on self-reported data, which may be subject to social desirability. Additionally, this study is cross-sectional and therefore, causal interpretations cannot be inferred. Thus, while it is likely that sexual satisfaction and cognitive interdependence explained the occurrence of anal sexual activity, it is also possible that for some couples, one or both partners' engaging in PAI was a result of sexual satisfaction or cognitive interdependence. Moreover, all HIV-positive men in this study were prescribed antiretroviral medications and the couples were from one geographic region where tremendous efforts are made to ensure connection to comprehensive HIV care, which restricts our ability to generalize these results to serodiscordant same-sex male couples in other regions. Finally, many of the men in this study lived through the HIV

epidemic where AIDS had a profound impact on all of their lives, which may be different from younger cohorts.

Notwithstanding these limitations, our findings point to the importance of integrating a discussions of sexual satisfaction in HIV care, using a couples-based approach that accounts for personal and relational motivations to help foster sexual health. Specifically, we found that sexual satisfaction was positively associated with engaging in protected sex for HIV-negative partners. Additionally, HIV-positive partners in serodiscordant relationships may be willing to relinquish their own immediate sexual gratification in order to protect their partners from the risk of HIV transmission. Interventions designed to provide serodiscordant same-sex male couples with the opportunity to openly discuss HIV, sexuality, and relationship issues may foster improved satisfaction with their sexual relationship, as well as reductions in sexual risk behavior.

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Table 1Overall sample ($N = 232$) and Couple-Level Bivariate Associations ($N = 116$).

	HIV-positive Partner	HIV-negative Partner	test statistic	K
Race			$\chi^2(9) = 28.01$	0.08
Black	12 (10.3%)	15 (12.9%)		
White	71 (61.2%)	72 (62.1%)		
Latino	24 (20.7%)	15 (12.9%)		
Other	9 (7.8%)	14 (12.1%)		
Income			$\chi^2(1) = 10.53^{**}$	0.21 ^{**}
\$20,000 or more	59 (50.9%)	81 (69.8%)		
< \$20 000	57 (49.1%)	35 (30.2%)		
Depression			$\chi^2(1) = 2.16$	0.10
Less than 16	61 (52.6%)	74 (63.8%)		
16 or greater	55 (47.4%)	42 (36.2%)		
	M (SD)	M (SD)	test statistic	ICC
Age	46.89 (9.90)	46.50 (11.97)	$t(230) = -0.27$	0.55 ^{***}
Sexual Satisfaction	14.72 (6.62)	15.67 (6.32)	$t(230) = -1.13$	0.39 ^{***}
IOS	3.73 (1.64)	3.82 (1.52)	$t(230) = 0.42$	0.24 ^{***}
Autonomy	33.67 (8.82)	32.97 (8.36)	$t(232) = -0.62$	0.06

p<0.001,**
p<0.01,*
p<0.05

Table 2

Multinomial Logistical Regression Model Predicting Sexual Behavior (*N* = 232)

Variable Type	Unprotected Anal Sex vs. Protected Anal Sex			No Anal Sex vs. Unprotected Anal Sex			No Anal Sex vs. Protected Anal Sex		
	OR	95% CI	β	OR	95% CI	β	OR	95% CI	β
<i>HIV-positive partner</i>									
Satisfaction	0.85*	0.75, 0.97	-0.16	0.86*	0.75, 0.98	-0.15	1.01	0.90, 1.13	0.01
IOS	1.52*	1.04, 2.23	0.42	1.31	0.91, 1.86	0.27	0.86	0.57, 1.31	-0.15
Autonomy	1.11*	1.02, 1.20	0.10	1.03	0.96, 1.10	0.03	0.93	0.86, 1.00	-0.08
Age	1.00	0.92, 1.08	-0.00	0.93	0.86, 1.01	-0.07	0.94	0.86, 1.02	-0.07
<i>HIV-negative partner</i>									
Satisfaction	1.15*	1.02, 1.30	0.14	1.03	0.92, 1.16	0.03	0.90	0.80, 1.01	-0.11
IOS	1.02	0.63, 1.65	0.02	0.99	0.60, 1.65	-0.01	0.97	0.61, 1.56	-0.03
Autonomy	0.98	0.90, 1.06	-0.03	1.00	0.93, 1.08	0.01	1.03	0.95, 1.11	0.03
Age	1.03	0.95, 1.11	0.03	1.20**	1.10, 1.32	0.18	1.17**	1.07, 1.27	0.15
<i>Couple-level</i>									
Relationship length	1.00	0.99, 1.01	-0.00	1.01*	1.00, 1.02	0.01	1.01*	1.00, 1.02	0.01
Time since diagnosis	1.00	0.99, 1.00	-0.01	0.99	0.98, 1.00	-0.01	1.00	0.99, 1.00	-0.00
Viral load suppression	2.26	0.68, 7.49	0.81	1.49	0.40, 5.64	0.40	0.66	0.18, 2.38	-0.43

*** *p* < 0.01;

* *p* < .05