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Constructive communication patterns and associated factors among male couples

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Abstract

Constructive communication is an important correlate to examine for sexual health promotion and HIV prevention among male couples. However, few studies have examined the effect of different relationship dynamics on *both* partners' perceptions of constructive communication. Using dyadic data collected from 361 male couples, the present study explores which relationship dynamics were associated with constructive communication patterns. The results highlight the relevance of investment in a sexual agreement and trust within the relationship in perceptions of constructive communication. These findings may be particularly useful to guide the development of future dyadic-focused sexual health and HIV preventive interventions for male couples.

Keywords

Male couples; communication patterns; relationship dynamics; multilevel modeling; sexual health

Introduction

In the United States, gay, bisexual, and other men who have sex with men (MSM) are the number one group most critically affected by human immunodeficiency virus (HIV) (CDC, 2016). Researchers have noted that a substantial proportion of new HIV infections among MSM are occurring within the context of primary partnerships (Goodreau et al., 2012; Sullivan, Salazar, Buchbinder, & Sanchez, 2009). Male couples' risk for HIV is attributable to: an increased likelihood of engaging in condomless anal sex within the relationship (i.e., between primary partners), not confirming partners serostatus as seronegative before engagement in **condomless anal sex**, and/or achieving and maintaining an undetectable viral load for the partner living with HIV, if applicable (Prejean et al., 2011).

Findings from studies with male couples suggest relationship dynamics may help highlight their difficulty in managing their risk for HIV. For instance, intimacy, a desire for the relationship to last, and relationship satisfaction may be powerful motivators toward male

couples' engagement in **condomless anal sex** (Golub, Starks, Payton, & Parsons, 2012; Hoff, Chakravarty, Beougher, Neilands, & Darbes, 2012). Additionally, sexual agreements may help reduce risk for HIV, but may also present additional challenges if one or both partners in the relationship break their sexual agreement. A sexual agreement is an explicit mutual understanding made between two male partners about which sexual and relational behaviors they agree to engage in within and/or outside of their relationship (Hoff & Beougher, 2010).

Communication between partners is a critical factor in **couples'** ability to negotiate risk reduction practices (Hoff et al., 2009) and allowed or permitted sexual behaviors (e.g., sexual agreement). In fact, the effectiveness of HIV risk reduction strategies relies on a **couples'** ability to communicate constructively when a problem or concern arises. Notably, longitudinal studies have found that higher levels of mutually constructive communication are an important factor in optimal sexual health behaviors among same-sex male couples. For example, gay men who reported greater levels of mutual constructive communication with their partner were significantly less likely to have either partner break their sexual agreement (Gomez et al., 2012) and engage in **condomless anal sex** with an outside partner (Darbes, Chakravarty, Neilands, Beougher, & Hoff, 2014).

Mutual constructive communication strategies have been conceptualized as active engagement, collaborative strategies, or supportive coping. In the context of male couples, **mutual constructive communication** refers to the communication processes whereby one couple member engages in joint problem solving, mutual disclosure, and provision of emotional and practical support during a conflict situation with other couple members. **Mutual constructive communication** strategies involve both partners playing an equal role in the decision making process to help resolve the conflict or stress within their relationship (Bodenmann, 2005; Manne, Badr, Zaidner, Nelson, & Kissane, 2010; Porter, Keefe, Hurwitz, & Faber, 2005). As such, when a male couple has partners who differ on their ability to constructively communicate (i.e., within couple difference of **mutual constructive communication**), this difference could reflect that couples' ability to collectively and mutually problem solve and provide emotional and practical support when a conflict arises. Differences of **mutual constructive communication** between partners may also be associated with other dynamics of the couples' relationship as communication is an important component to trust, commitment, satisfaction, and aspects of a sexual agreement. For instance, a male couple with one partner who is unsatisfied with the relationship while the other partner is satisfied may not be able to discuss and jointly problem solve if these two partners also differ on their ability to **communicate constructively**. Consequently, male couples with partners who differ on dynamics of trust, relationship commitment, and/or aspects of a sexual agreement may also differ about their **mutual constructive communication** strategies. Investigating these differences of **mutual constructive communication** and other relationship dynamics within male couples' relationships could provide useful data to help inform development of intervention content for future sexual health and relationship programs.

In addition to examining the associations between differences in relationship dynamics and difference of **mutual constructive communication** within couples' relationships, it would

be equally important to assess similar types of associations across a sample of male couples by taking couples averaged scores. Examining couples averaged scores of relationship dynamics of trust, relationship commitment, and aspects of a sexual agreement to their averaged score of **mutual constructive communication** may illuminate differences that exist across a sample of male couples; these data could then be used to help identify male couples which may benefit from participating in sexual health and relationship programs developed for them.

Relationship dynamics, including **mutual constructive communication** strategies, play an important role toward health promotion and health behavior change among couples. The Theory of Interdependence provides a theoretical framework to understand and measure how partners interact, and influence their outcomes and behaviors within the context of a relationship (Rusbult & Van Lange, 2003). Prior research has used **the Theory of Interdependence** as a theoretical framework to specifically understand health behavior change within couples' relationships. For instance, Lewis et al. (2006) extended interdependence theory to understand how health behavior change occurs among couples, including health-enhancing and health-compromising behaviors related to HIV among gay male couples (Lewis, Gladstone, Schmal, & Darbes, 2006). Further, **the Theory of Interdependence** has also been used as a theoretical framework to understand how relationship dynamics influenced sexual risk perceptions, intentions, and behaviors among at-risk heterosexual couples (Warren, Harvey, & Agnew, 2012). One important component of **the Theory of Interdependence** is predisposing factors of the couple, which characterizes the dynamics that exist in the couples' relationship. These predisposing factors include relationship functioning and communication style (e.g., **mutual constructive communication**) and as such, are important to consider before encouraging the couple to adopt a health-enhancing behavior related to HIV prevention and/or their sexual health.

Within the broader literature, **mutual constructive communication** has been hypothesized to be a key mechanism in promoting optimal health behaviors among couples (Bodenmann, 2005; Lewis et al., 2006); however, studies have yet to explicitly identify the ways in which relationship dynamics are associated with **mutual constructive communication** among male couples to guide the development of dyadic-focused sexual health and HIV prevention interventions.

Despite attention devoted to the role of communication strategies in promoting optimal relationship outcomes and health behaviors, researchers have yet to directly examine whether different types of relationship dynamics are related to each partners' perceptions of mutual constructive communication strategies among male couples. Additionally, there is a need to better understand which relationship dynamics, as well as sociodemographic and behavior factors are related to differences between partners' perceptions of communicating constructively during a conflict or when an issue arises in their relationship; findings from these types of associations could be useful toward development of future dyadic sexual health and HIV preventive interventions that incorporate and/or include strategies to help male couples communicate more constructively.

The Present Study

By using dyadic data collected from 361 male couples who live in the U.S., the present study sought to explore which demographic and behavioral characteristics, and relationship dynamics, such as trust, commitment, and investment in a sexual agreement were associated with mutual constructive communication patterns. Using **the Theory of Interdependence** as the theoretical framework, specific hypotheses were generated to assess whether: 1) less difference within **couples'** scores of trust, relationship commitment, and investment in a sexual agreement would be positively associated with less differences within **couples'** scores of **mutual constructive communication**; 2) greater **couples'** averaged scores of trust, relationship commitment, and investment in a sexual agreement would be positively associated with greater **couples'** averaged scores of **mutual constructive communication**. A novel online recruitment method was used to collect dyadic data from the sample, and dyadic and multilevel analyses were conducted to achieve the proposed aim and test the hypotheses from an individual- and couple-level perspective. A dyadic and multilevel approach is necessary to fully assess which relationship dynamics, as well as demographic and behavioral factors are associated with scores of perceived mutual constructive communication patterns among partnered men in these relationships, differences between **partners'** scores of perceived mutual constructive communication patterns within the couple, and averaged scores of perceived mutual constructive communication patterns between couples.

Methods

Recruitment and Eligibility

Recruitment for the present study was conducted through Facebook® banner advertising.

During a ten-week recruitment period during 2011, banner advertisements were displayed to Facebook members who had certain demographic characteristics listed in their Facebook profile. Specifically, our study advertisements targeted Facebook members who described themselves as male, being 18 years of age and older, living anywhere in the US, interested in men, and having a current relationship status as either being in a relationship, engaged, or married. All Facebook users whose profiles met this initial eligibility criteria had an equal chance of being shown one of the three banner advertisements. In total, the banner advertisements were shown 8.5 million times (i.e., impressions) on potential participants' profiles. The advertisements briefly described the purpose of the study and included a picture of a male same-sex couple.

A total of 7,994 Facebook users clicked on at least one of the advertisements and were then directed to the study webpage. The study webpage briefly described the purpose of the study, what a participant could expect if he chose to participate (e.g., be asked to invite his main, male relationship partner to also participate in the study), and asked eligibility questions. Both men in the couple had to have met the following eligibility criteria in order to enroll in our study: be 18 years of age and older; live in the U.S.; be in a sexual relationship with another male and have had either oral and/or anal sex with this partner within the previous three months. Eligible participants were asked to complete an electronic

consent form. Consenting participants advanced to take the 30–40 minute confidential survey.

A partner referral system was embedded in the survey to facilitate data collection from both men of the couple. The partner referral system required a participant to input his own and his main partner's email address. The main partner to the participant was then sent an email inviting him to participate in the study. Email addresses for both men in each couple were also used to link survey responses between the two men, along with other items that were used to verify the couples' relationship post-hoc (e.g., relationship length). Every fifth couple (i.e., 5th, 10th, 15th, etc.) that completed the survey received two modest incentives via email (e.g., \$20 electronic gift card for each partner). The Medical College of Wisconsin Institutional Review Board approved the study protocol.

Online survey

The online survey service provider Survey Gizmo hosted our study webpage, electronic consent form, and confidential, online survey through the use of a secure access portal (i.e., <https://>). Only the primary investigator of the study and managers at Survey Gizmo had access to the study data. Though we collected each participant's email address, no other personal identifying information was collected. Email addresses were deleted after data collection was completed.

Measures

Dependent Variables—Mutual constructive communication, a subscale of Communication Patterns Scale (Christensen & Shenk, 1991), which consists of three items that assess couples mutual discussion of problems, expression of feelings, understanding of views, negotiation of solutions, and resolution of problems ($\alpha = 0.83$). Response options for each item were captured on a 9-point Likert-type scale ranging from 1 = Very unlikely to 9 = Very likely. For this analysis, male couples' **mutual constructive communication** scores were examined in three ways: among partnered men individually, within the couples relationships (i.e., absolute difference between couple members' scores), and comparing between couples (i.e., couple members' averaged score). These three dependent variables were selected to allow us to better understand the extent to which couple members' similarities and differences in relationship dynamics were associated with couple members' individual perception of engaging in mutual constructive communication with their partner, as well as to better understand the dyadic nature of these associations. First, we were interested in examining which individual, between-couple, and within-couple factors were associated with each couple member's individual **mutual constructive communication** score. In addition, we assessed the extent to which individual-level, between-couple, and within-couple factors were associated with within couples' **mutual constructive communication** (i.e., difference in couple members' scores on perceived mutual constructive communication). We also assessed which individual-level, between-couple, and within-couple factors were associated with the between couples score on **mutual constructive communication** as a dependent variable (i.e., the average couple member's scores on perceived mutual constructive communication).

Independent Variables—Sociodemographic and Behavioral factors. Participants were asked several sociodemographic questions, including age, race, ethnicity, and education attainment. Relationship characteristics assessed included relationship length, cohabitation duration, and aspects about a sexual agreement. Aspects of a sexual agreement included establishment (yes/no), current type, and recent adherence (yes/no) to the sexual agreement (i.e., within three months prior to assessment). Current type of sexual agreement items were assessed categorically with the following response options, “We only have sex with each other and no one else”, “We have sex with each other, and we are allowed to have sex with others under certain guidelines/rules” and “We have sex with each other, and are allowed to have sex with others without any guidelines/rules”.

Men were also asked to self-report their HIV serostatus, their primary partner’s perceived HIV serostatus, engagement of **condomless anal sex** within the relationship (e.g., with main partner), and whether they had had sex with any casual MSM partners within the previous three months, including **condomless anal sex**.

Relationship dynamics.—As shown in Table 1, several validated scales were used to assess dynamics within same-sex male couples’ relationships, including: trust (Remple, Holmes, & Zanna, 1985), relationship commitment (Rusbult, Martz, & Agnew, 1991), and investment in a sexual agreement (Neilands, Chakravarty, Darbes, Beougher, & Hoff, 2010). The Investment Model was used to examine the processes in which gay men persist within their sexual relationship with their main partner (Le & Agnew, 2003; Rusbult, 1980). The 22-item validated scale consisted of four constructs. Commitment level assessed long-term orientation toward the partnership, intention to remain in a relationship, and psychological attachment to a partner (e.g., **“I want our relationship to last for a very long time.”**)($\alpha = .84$) (Arriaga & Agnew, 2001; Le & Agnew, 2003; Rusbult & Buunk, 1993). Satisfaction level assessed, in a comparative fashion, the negative and positive outcomes of being in the relationship (e.g., **“I feel satisfied with our relationship.”**)($\alpha = .91$). Quality of alternatives assessed the perception that being single or an attractive alternative partner existed outside of the main relationship, and that this alternative would provide superior outcomes when compared to the current relationship (e.g., **“My alternatives are attractive to me (dating another, being single).”**)($\alpha = .80$) (Le & Agnew, 2003). Investment size assessed the existence of concrete or tangible resources in the relationship that would be lost or greatly reduced if the relationship ends (**“I feel very involved in our relationship – like I have put a great deal into it.”**)($\alpha = .74$) (Le & Agnew, 2003). The overall measure had a reliability of .90. Response options for each item were captured on a 7-point Likert-type scale ranging from 0 = Do Not Agree at All to 6 = Agree Completely.

The Trust Scale was used to assess the degree to which gay men had faith in their main partners and viewed their partners as dependable and predictable (Remple et al., 1985). The 17-item validated measure consisted of three subscales: the predictability subscale assessed the consistency and stability of a partner’s specific behaviors based on past experience (e.g., **“My partner is very unpredictable. I never know how he is going to act from one day to the next.”**)($\alpha = .72$); the dependability subscale assessed the dispositional qualities of the partner which warrant confidence in the face of risk and potential hurt (e.g., **I can rely on**

my partner to keep the promises he makes to me.”)($\alpha = .70$); and the faith subscale assessed feelings of confidence in the relationship and the responsiveness and caring expected from the partner in the face of an uncertain future (e.g., “When I am with my partner, I feel secure in facing unknown new situations.”)($\alpha = .89$) (Remple et al., 1985). The overall measure had a reliability of .89. Response options for each item were captured on a 7-point Likert-type scale ranging from $-3 =$ Strongly Disagree to $3 =$ Strongly Agree.

The Sexual Agreement Investment Scale was used to assess participants’ value, commitment, and satisfaction with a sexual agreement with the main partner (Neilands et al., 2010). The 13-item validated measure included three domains: value of the agreement (e.g., “How much do you value your current agreement?”)($\alpha = .94$), commitment to the agreement (e.g., “How important is it for you to be committed to your current agreement?”)($\alpha = .93$), and satisfaction with the agreement (e.g., “How satisfied are you with your current agreement?”)($\alpha = .85$) (Neilands et al., 2010). The overall measure had a reliability of .96. Response options for each item were captured on a 5-point Likert-type scale ranging 0 = Not at All to 4 =Extremely. Only participants who reported the existence of a sexual agreement were asked to complete this measure.

Data analysis

Dyadic data from 361 male couples (722 individuals) were analyzed using Stata Version 12 (StataCorp, College Station, TX). Prior to data collection, a minimum sample size of 160 dyads was estimated to provide a minimum power of 0.80 for detecting regression coefficient estimates for the outcome variables pertaining to mutual constructive communication (Kenny, Kashy, & Cook, 2006; Rabe-Hesketh & Skrondal, 2008). **To account for the non-independence of dyadic data, data were arranged in long format to conduct multilevel modeling analyses according to recommendations by Kenny et al. (2006) and Rabe-Hesketh and Skrondal (2008).**

Several variables were recoded for descriptive purposes. For instance, participant’s self-report of race was compared to his partner’s self-report of race to create a dummy variable that represented whether the couple was of mixed race (or not). This same format was also used to construct other independent, dummy couple-level demographic and sexual behavioral variables. To assess how factors may be associated with male couples’ **mutual constructive communication** patterns, we examined a variety of couple-level relationship dynamics. In detail, relationship dynamics (e.g., trust) were assessed in two-specific ways at the couple-level. First, the average of both couple members’ scores on each dynamic were calculated to assess differences that existed *between* couples in the sample. Second, the absolute difference between the couple members’ scores for each of the relationship dynamics was also calculated to examine differences that existed *within* couples.

Descriptive statistics including means, standard deviations, rates, and percentages were calculated, as appropriate, for the measures. We then constructed three different regression models to assess which independent individual- and couple-level demographic, sexual behavior, and relationship factors may be associated with **mutual constructive communication** among each couple member individually, within couples, and between

couples, respectively. To identify which independent variables were significantly associated with each of the three outcome variables, we employed regression models to explore associations between the outcome and independent variables by regressing the independent variables one at a time. Multilevel regression models were used for the outcome **mutual constructive communication** among couple members' individual scores whereas linear regression models were used for the within and between couples' **mutual constructive communication** outcomes; all independent variables in the within and between outcome models were at the couple-level. Independent variables that remained statistically significant (i.e., $p < .05$) with an outcome variable were then included in the final respective regression model for that particular outcome variable. For each multivariate linear and multilevel regression models, we used a backward elimination strategy to remove independent variables that remained non-significant until all variables, excluding the pre-determined confounders, had remained significant, including the overall final model (i.e., $p < .05$). **We included relationship length and couples' HIV-status as potential confounders for each of the three final regression models.** We report the coefficients, standard errors, and statistical significance for the factors in the linear and multilevel multivariate regression models. We also calculate and report the total variance explained by the covariates in the multivariate multilevel and linear regression models (e.g., R^2) (Rabe-Hesketh & Skrondal, 2008). The intraclass correlation coefficient for the unconditional model (i.e., model with no covariates) is also provided for the outcome **mutual constructive communication** among couple members. The **intraclass correlation coefficient** is defined as the proportion of variation in the outcome variable that is accounted for by the dyad, and is represented by the level-2 variation divided by the sum of the level-1 and level-2 variation (Rabe-Hesketh & Skrondal, 2008).

Results

Characteristics of the sample

The mean age for participants was 33.0 years ($SD = 10.8$), and the average age difference between partners was 5.2 years ($SD = 5.8$). The majority of male couples in the sample ($N = 361$) self-identified as gay (97%), concordantly HIV-negative (76%), and White (66%). Many of the couples also had one or both partners who had at least a Bachelor's degree (68%), were employed (94%), and/or lived in an urban environment (89%). The sample was diverse regarding geographic location: 32% reported living in the western region of the U.S., 23% lived in the Midwest, 29% in the South, and 17% lived in the Northeast region.

The average relationship length for couples was 4.9 years ($SD = 5.5$), and among those who lived together (75%), their mean cohabitation duration was 5.2 years ($SD = 5.8$). With respect to sexual agreements, 57% ($n = 207$) of couples had both partners who concurred about establishing a sexual agreement; of these 207 couples, 84% ($n = 174$) had both partners who concurred about their current type of sexual agreement and 80% ($n = 140$) who concurred about adhering to the agreement within the three months prior to assessment. Most couples practiced **condomless anal sex** within their relationship (84%). Approximately 31% of couples had one or both men who reported having had sex with a casual MSM partner within the three months prior to assessment. Twenty-one percent of

couples had one or both men who had **condomless anal sex** with a casual MSM partner during the same timeframe.

Overall, male couples reported high levels of relationship commitment, trust, and investment in their sexual agreements. Couple members reported they perceived to communicate constructively with their main partners; this was also evident for couples' averaged score of this dynamic. However, differences within the couples (i.e., between partners) were noted about couple members perceiving to being able to communicate constructively in their relationship.

Several factors were significantly associated with mutual constructive communication patterns among couple members individually, within couples, and between couples. Details about characteristics of the sample, results from the bivariate and multivariate multilevel and linear regression models with independent variables are presented in Table 2. The results from the final multivariate multilevel and linear regression models are herein described.

Factors Associated with Mutual Constructive Communication among Couple Members Individually

After controlling for potential confounding factors, increases in couple members' perceived mutual constructive communication patterns were associated with male couples who, on average had higher scores of: relationship satisfaction ($\beta = 0.28$ (SE: 0.11), $p < .05$); having faith in their main partner to be trustworthy ($\beta = 0.61$ (SE: 0.13), $p < .001$); and/or being committed to their sexual agreement ($\beta = 0.57$ (SE: 0.18), $p < .01$). No other factors were significantly associated with couple members' individual perceptions of mutual constructive communication patterns. Overall, the model explained approximately 31% of the estimated variance for predicting couple members' individual perceptions of mutual constructive communication patterns.

Factors Associated with Mutual Constructive Communication Within Couples

After controlling for potential confounding factors, less differences between partners' scores for perceived mutual constructive communication patterns were associated with couples who, on average, had higher scores of satisfaction with their sexual agreement ($\beta = -0.31$ (SE: 0.09), $p < .01$). Greater differences between partners' scores of perceived mutual constructive communication patterns were associated with greater differences between partners' scores of perceiving that alternatives than being in the current relationship had existed ($\beta = 0.22$ (SE: 0.06), $p < .001$); perceiving the main partner as being predictable for trustworthiness ($\beta = 0.30$ (SE: 0.06), $p < .001$); and/or having faith in the main partner to be trustworthy ($\beta = 0.28$ (SE: 0.08), $p < .01$). No other factors were significantly associated with perceived mutual constructive communication patterns within couples. Overall, the model explained approximately 21% of the estimated variance for predicting differences in perceived mutual constructive communication within couples.

Factors Associated with Mutual Constructive Communication Patterns Between Couples

After controlling for potential confounding factors, greater averaged scores for perceived mutual constructive communication patterns were associated with couples who, on average,

had higher scores of: being satisfied in the relationship ($\beta = 0.29$ (SE: 0.11), $p < .001$); having faith in their main partner to be trustworthy ($\beta = 0.57$ (SE: 0.09), $p < .001$); being committed to their sexual agreement ($\beta = 0.44$ (SE: 0.22), $p < .05$); and/or valuing their sexual agreement ($\beta = 0.40$ (SE: 0.19), $p < .05$). In addition, greater averaged scores for perceived mutual constructive communication patterns were associated with less difference between partners' scores of being committed to their sexual agreement ($\beta = -0.25$ (SE: 0.11), $p < .05$). No other factors were significantly associated with perceived mutual constructive communication patterns between couples. Overall, the model explained approximately 49% of the estimated variance for predicting perceived mutual constructive communication patterns between couples.

Discussion

This study expands on our knowledge about the associations between different relationship dynamics of trust, relationship commitment and investment in a sexual agreement and same-sex male couples' reports of perceived mutual constructive communication patterns. Our findings suggest that couples who report greater levels of, and less differences in, trust, relationship commitment, and investment in a sexual agreement are more likely to perceive they communicate more constructively compared to couples with lower levels of, or greater differences in these relationship dynamics. This is consistent with prior literature which illustrates that similarities within couples' perceptions of relationship dynamics are related to greater similarities in their communication patterns (Badr, 2004; Revenson, 2003). The results of this study highlight the relevance of specific relationship dynamics among same-sex male couples, including investment in a sexual agreement and trust within the relationship, toward their perception of being able to communicate constructively with their main partner. Given the importance of relationship dynamics, specifically sexual agreements, these findings may be particularly useful to guide the development couples-focused sexual health and HIV preventive interventions for male couples.

Investment in a sexual agreement emerged as an important aspect of partners' perceptions of communicating constructively within their relationship. Specifically, men in partnerships in which couples had higher commitment and value towards their sexual agreement reported greater perceptions of being able to communicate constructively compared to couples with lower levels of commitment and/or value to their sexual agreement. Couples with greater satisfaction with their sexual agreement also had smaller discrepancies in their perceptions of mutual constructive communication compared to couples with lower satisfaction with their sexual agreement. There are two possible explanations for this similarity in relationship dynamics regarding sexual agreements: assortative mating versus convergence over time. Men may have selected each other initially because they share similar relationship dynamics, which would maximize harmony and make it easier for couples to engage in constructive communication when a conflict arises (Chi, Epstein, Fang, Lam, & Li, 2013). Another possibility is partners may influence each other's beliefs about sexual agreements via mutual constructive communication, fostering more similar investment in their sexual agreement. Additionally, greater investment in one's sexual agreement may lead to engaging in more constructive communication. Due the cross-sectional nature of these data, we cannot establish directionality. However, it is notable that relationship length was not associated

with mutual constructive communication, suggesting that couples who were together longer were not more likely to perceive they mutually communicate constructively.

Our study's findings also highlight discrepancies between partners' perceptions about aspects of their sexual agreement (i.e., establishment, adherence, investment) are closely linked to greater differences about their perceptions of communicating constructively during conflict situations. Discrepancies in aspects of sexual agreements within couples can produce stress within the relationship. For example, discrepancies may lead to couples to interact negatively and produce distress (Baucom, Epstein, Rankin, & Burnett, 1996). As such, couples that have divergent perceptions about their sexual agreements may be unable to resolve their differences in a constructive manner. It is also possible that partners who are not on the same-page about their relationship (or aspects about their sexual agreement) may not be attuned to their own or partners' communication styles. **Thus, therapists and clinicians may be able to assist male couples by helping them practice conversations about their sexual agreements and making communication difficulties visible. In addition to promoting better communication through teaching speaking and listening techniques, clinicians can help couples learn how best to communicate about their own distress and disagreements. For example, the Couples Coping Enhancement Training (CCET) program may be particularly useful for clinicians in exploring emotional intimacy, creating synergy in the relationship, and managing the strain of relationship discord for gay male couples (Bodenmann, 1997). A key element of CCET is addressing fairness, equity and boundaries in the relationship through improving each partners own stress management, communication styles, and problem-solving skills (Bodenmann & Shantinath, 2004).** In particular, conversations about sexual agreements could be introduced in a therapy or counseling session by having both relationship partners independently think about their sexual desires and sexual health goals (e.g., HIV prevention) before discussing them together. Similar conversations about other topics other than sexual agreements (e.g., finances) could also be applied in this setting to help male couples' communicate more constructively **and problem solve together.**

Trust was another important relationship dynamic that emerged from our findings. Couples who had greater within couple discrepancies of perceiving their main partner to be predictable and/or having faith to do no harm for being trustworthy was associated with larger within couple perceptions of engaging in mutual constructive communication. Trust within the context of male couples' relationships refers to the expectation that a partner can be relied on to behave in a responsive and caring manner (Remple et al., 1985). Historically, trust has been shown to be a strong correlate and reason for why some MSM and male couples engage in **condomless anal sex** (Appleby, Miller, & Rothspan, 1999). Men who perceive that their partners are untrustworthy may be less willing to engage in constructive conversations with their partners – or – are less willing to engage in constructive conversations when issues of trust arise in their relationship. Further research which investigates how trust impacts communication within male couples' relationships is warranted **and may best approached by using a longitudinal study design paired with mixed methods. This approach would help illuminate the potential cause-effect**

relationship of mistrust and communicating constructively among male couples over time.

Our study found that no sociodemographic and behavioral factors were significantly associated with male couples' perceived constructive communication patterns, as well as for the between- and within-couple multivariate models. Prior research has suggested that discrepancies in sociodemographic factors, such as age, may produce power differentials which may increase HIV risk (Anema et al., 2013). However, our findings illustrate that relationship dynamics were the strongest variables associated with mutual constructive communication patterns. Acitelli, Kenny, and Weiner (2001) explained that distal aspects of partner similarity regarding the characteristics of the individual partners (e.g., race/ethnicity, educational attainment) are not as relevant to relationship and health outcomes as are more proximal couple-focused dynamics (e.g., trust, relationship satisfaction, and investment in a sexual agreement) in predicting communication patterns between couples. These findings suggest that clinicians should not rely or solely consider that differences in sociodemographic factors between relationship partners confer to greater communication difficulties in the relationship. Instead, clinicians should attend to each partners' needs and desires in order to provide affirmative couples therapy to gay males.

The results of the current study underscore the importance of assessing and intervening with same-sex couples' relationship dynamics (e.g., trust, relationship commitment, investment in a sexual agreement) in clinical contexts. Male couples awareness of their similarities and differences about their trust, commitment to the relationship, and investment in their sexual agreement are critical to not only help develop consensus, agreement, or acceptance of these differences and being able to negotiate related-strategies, but also for learning how best to mutually communicate constructively within their relationship. Clinicians introducing communication interventions should assess the degree of similarity in couple's perceptions of relationship dynamics in order to help the couple reach consensus more effectively when conflicts arise. A variety of couples-based therapy models may be particularly useful for assisting male couples to improve their communication patterns. **In addition to CCET, cognitive-behavioral (Epstein & Baucom, 2002) and integrative behavioral couples therapy (Jacobson & Christensen, 1998) are also useful methods for helping couples to assess and modify aspects of their relationship by developing more mutually constructive communication styles.**

Limitations and Suggestions for Future Research

The use of a cross-sectional study design with dyadic data from a convenience sample precludes us from making casual inferences and generalizing our findings to all male couples who live in the United States, as well as those who do and do not use the Internet and/or Facebook. Although we did not collect identifying information, participation, social desirability, and recall biases may have influenced participants to inaccurately report information about their relationship, HIV status, and sexual behaviors. In addition, participants may have completed the survey with their main partners, despite our request for them to complete it independently and separately, and therefore potentially causing some bias. Moreover, the demographic and relationship factors that were assessed for this study

are not exhaustive. Other factors, such as intimacy, sexual satisfaction, jealousy and the possible presence of intimate partner violence, may exist and influence couples' perceived mutual constructive communication patterns. Future research that examines communication patterns among male couples should specifically address these limitations. **For example, future projects could use a variety of recruitment methods, mixed methods, and collect dyadic data in person to further examine how male couples communicate constructively and whether their communication patterns differ by health and relationship topic (e.g., agreements, finances, trust). Researchers could analyze videos and qualitative transcripts of couples' discussing and problem-solving about different topics that are important to their relationship (e.g., sexual agreements) and health (e.g., HIV prevention). Findings from these types of analyses may provide additional insights about couples' constructive communication patterns as well as how couple members' body language, facial expression, and other visual cues may impact the other members' interpretation of what's being discussed and how that member responds. This type of methodology would allow researchers and clinicians to assess whether the interpretation from one couple member aligns with what the other couple member states, and vice versa.**

Conclusions

Despite these limitations, our study's main strengths are the large geographically diverse sample of Internet-using male couples, the use of dyadic data, and ascertaining how a variety of relationship dynamics affect couples' perceived mutual constructive communication patterns. The results of this study suggest that intervening around specific relationship dynamics, such as investment in one's sexual agreement and trust, could help male couples engage in more constructive communication. Findings suggest that future research should focus on understanding perceptions of communication from *both* partners in the relationship. Additionally, the current findings have applied implications for researchers, practitioners, and clinicians for development of dyadic preventive and health promotion interventions (e.g., sexual health, HIV prevention) for male couples and their communication patterns.

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Table 1.

Independent measures used to assess relationship characteristics of commitment, trust, and investment in a sexual agreement

Independent measure with subscales	No. of items	Response scale	Cronbach's alpha
Investment model	22	7-point Likert: "Do not agree" to "Agree completely"	0.90
Commitment level	7		0.84
Satisfaction level	5		0.91
Investment size	5		0.74
Quality of alternatives	5		0.80
Trust scale	17	7-point Likert: "Strongly disagree" to "Strongly agree"	0.89
Predictability	5		0.72
Dependability	5		0.70
Faith	7		0.89
Sexual Agreement Investment scale	13	5-point Likert: "Not at all" to "Extremely"	0.96
Commitment	4		0.93
Satisfaction	3		0.85
Value	6		0.94

Table 2.

Characteristics and results from bivariate and multivariate regression models of factors associated with male couples' perceived mutual constructive communication patterns

Demographic and behavioral characteristic	N (%)	Partnered men				Mutual constructive communication			
		Bivar.		Multivar.		Within couples		Between couples	
		β (SE)		β (SE)		Bivar.	β (SE)	Bivar.	β (SE)
Non-white or mixed race couple (ref)	124 (34%)	-0.03 (0.15)				0.12 (0.10)		0.01 (0.10)	
Both partners had at least a Bachelor's degree (vs. not)	134 (37%)	-0.26 (0.14)				0.06 (0.10)		-0.27 (0.10)*	
Both men in couple were employed (vs. not)	235 (65%)	-0.11 (0.15)				-0.05 (0.10)		-0.10 (0.10)	
HIV-status of couple	58 (16%)	-0.43 (0.32)		0.33 (0.22)		0.17 (0.18)		-0.51 (0.19)**	0.42 (0.19)
Discordant (ref)	275 (76%)								
Concordant negative	28 (8%)								
Concordant positive									
One or both partners had sex outside of their relationship (vs. not)	113 (31%)	-0.08 (0.16)				-0.09 (0.10)		-0.06 (0.11)	
Condomless anal sex									
Within relationship (vs. not)	304 (84%)	-0.08 (0.19)				-0.07 (0.13)		-0.05 (0.13)	
Outside relationship (vs. not) ^a	75 (21%)	-0.12 (0.27)				0.25 (0.23)		-0.10 (0.23)	
Aspects of sexual agreement									
Couple concurred they established an agreement (vs. not)	207 (57%)	0.64 (0.14)***				-0.41 (0.10)***		0.61 (0.10)***	
Couple concurred about type of agreement (vs. not) ^b	174 (84%)	-0.21 (0.17)				-0.03 (0.11)		-0.19 (0.12)	
Couple kept agreement within prior 3 months (vs. not)	166 (80%)	0.53 (0.22)*				-0.30 (0.14)*		0.51 (0.14)***	
Within couple-level relationship characteristic		Mean (SD)							
Age difference within couple (years)	5.2 (5.8)	0.02 (0.01)				-0.01 (0.01)		0.02 (0.01)**	
Investment model									
Commitment level	0.72 (0.83)	-0.38 (0.09)***				0.33 (0.06)***		-0.36 (0.06)***	
Satisfaction level	0.96 (0.91)	-0.31 (0.08)***				0.33 (0.05)***		-0.32 (0.05)***	

Demographic and behavioral characteristic	Mutual constructive communication					
	Partnered men		Within couples		Between couples	
	Bivar.	β (SE)	Bivar.	β (SE)	Bivar.	Multivar.
N (%)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)
Investment size	0.96 (0.77)	-0.15 (0.11)	0.15 (0.06)*		-0.12 (0.07)	
Quality of alternatives	1.16 (1.04)	-0.15 (0.09)	0.27 (0.05)***	0.22 (0.06)***	-0.11 (0.05)*	
Trust scale						
Predictability	1.10 (0.87)	0.01 (0.08)	0.19 (0.06)**	0.30 (0.06)***	-0.03 (0.06)	
Dependability	1.04 (0.89)	-0.27 (0.09)**	0.38 (0.05)***		-0.28 (0.06)***	
Faith	0.86 (0.80)	-0.50 (0.09)***	0.69 (0.06)***	0.28 (0.08)**	-0.51 (0.06)***	
Investment in sexual agreement scale						
Commitment	0.56 (0.63)	-0.42 (0.14)**	0.20 (0.09)*		-0.44 (0.09)***	-0.25 (0.11)*
Satisfaction	0.73 (0.69)	-0.31 (0.13)*	0.09 (0.08)		-0.32 (0.09)***	
Value	0.59 (0.61)	-0.35 (0.14)*	0.06 (0.09)		-0.35 (0.09)***	
Communication Patterns scale						
Mutual constructive communication	1.36 (1.25)	--	--	--	--	--
Between couple-level relationship characteristic	Mean (SD)					
Relationship length (years)	4.9 (5.5)	-0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Investment model						
Commitment level	5.36 (0.71)	0.73 (0.10)***	-0.38 (0.07)***		0.74 (0.07)***	
Satisfaction level	4.88 (0.95)	0.76 (0.06)***	-0.36 (0.05)***		0.79 (0.04)***	0.29 (0.11)***
Investment size	4.71 (0.82)	0.37 (0.09)***	-0.14 (0.06)*		0.39 (0.06)***	
Quality of alternatives	3.70 (1.08)	0.34 (0.07)***	-0.17 (0.05)***		0.33 (0.05)***	
Trust scale						
Predictability	5.31 (0.97)	0.54 (0.08)***	-0.32 (0.05)***		0.59 (0.05)***	
Dependability	5.57 (0.85)	0.81 (0.07)***	-0.33 (0.06)***		0.83 (0.05)***	
Faith	6.01 (0.84)	0.98 (0.07)***	0.61 (0.13)***		1.00 (0.05)***	0.57 (0.09)***
Investment in sexual agreement scale						

Demographic and behavioral characteristic	Mutual constructive communication					
	Partnered men		Within couples		Between couples	
	Bivar.	β (SE)	Bivar.	β (SE)	Bivar.	Multivar.
N (%)						
Commitment	3.56 (0.48)	0.96 (0.19)***	0.57 (0.18)**	-0.31 (0.12)**	0.99 (0.12)***	0.44 (0.22)*
Satisfaction	3.24 (0.63)	0.73 (0.14)***		-0.36 (0.10)***	0.80 (0.09)***	
Value	3.47 (0.50)	0.91 (0.17)***		-0.24 (0.11)*	0.96 (0.10)***	0.40 (0.19)*
Communication Patterns scale						
Mutual constructive communication	7.24 (1.29)	--	--	--	--	--
Final model results						
Observations, dyads		344, 175		322, 161		322, 161
Model test statistic		Wald $\chi^2(5)=137.26$ ***		F(6, 315)=13.57***		F(8, 313)=32.04***
R ²		0.31		0.21		0.45
Intraclass correlation coefficient (ICC)		0.35				

Notes.

Bivar. represents bivariate regression models; Multivar. represents multivariate regression models

R² represents total variance explained by covariates in the final multivariate regression model

* $p < .05$

** $p < .01$

*** $p < .001$

^a Only includes those who self reported having had sex outside of the relationship

^b Among couples who concurred about establishing a sexual agreement in their relationship