

Preventing HIV infections by understanding the role of sexual agreements: Validation of the Sexual Agreement Efficacy and Communication Scale

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Background

- High rates of seroconversion among gay male couples.
- Primary partners are an important and unrecognized source of new infections.
- Almost all gay couples have sexual agreements with their primary partner, and roughly 50% of these agreements are open and allow sex with outside partners.
- Though these agreements are common, there has been little examination of them (e.g., their types, their value, and how couples communication about them) in the field. This is one of the few studies/investigations into this area.

Gay Couples Study Objectives

- Identify relationship factors associated with sexual risk-taking among gay male couples.
- Explore how couple serostatus impacts sexual risk-taking and relationship quality.

Methods

Study Design

- **Recruitment.** Intact couples were recruited via modified targeted sampling strategy and from venue-based recruitment in San Francisco, CA, USA, between Jun 2005 and Feb 2007.
- **Eligibility.** Partners were eligible as a couple if they were in a committed relationship for at least 3 months, 18 years of age or older, fluent in English, and knew each other's HIV serostatus.
- **Survey.** Each partner from the couple separately completed a computer-administered survey covering HIV risk behavior (with primary and outside partners), relationship dynamics, and psychosocial variables.
- Because egocentric perceptions of sexual agreements and their associations with individuals' risk behavior were our primary focus, the scale development analyses presented here treated individuals rather than couples as the unit of analysis.

Survey Item Development

- Qualitative interviews from a diverse sample (N=39) yielded 5 expected facets of agreement quality:
 - **Agreement Value:** How much couples value their agreement.
 - **Agreement Commitment:** How committed couples are to their agreement.
 - **Agreement Satisfaction:** How satisfied couples are with their agreement.
 - **Agreement Efficacy:** How effectively couples feel they maintain their agreement.
 - **Agreement Communication:** How comfortable couples feel discussing their agreement.
- The psychometric properties of the Agreement Value, Commitment, and Satisfaction subscales were studied previously and described in Neilands TB, Chakravarty D, Darbes LA, Beougher SC, and Hoff CC. Development and validation of the sexual agreement investment scale. *Journal of Sex Research*, 47(1), 24–37, 2010. NIHMSID: NIHMS110481.
- The present study investigates the properties of the Agreement Efficacy and Agreement Communication items.
- Partners' attitudes toward their agreement were measured on a scale of 0 to 4 using Likert survey items.
 - Example: "How easy is it for you to keep your current agreement?"
 - 0=Not at all, 1=A little, 2=Moderately, 3=Very much, 4=Extremely

Analysis Strategy.

- Exploratory factor analysis of each subscale
 - Number of factors selected based on:
 - Global model fit statistics: CFI >=.95; SRMR <= .08
 - Empirical simple structure of geomin rotated factor loadings
- Internal reliability estimation via Cronbach's coefficient alpha
- Predictive validity assessment by regressing any broken agreements in the past 12 mos (0=no; 1=yes) and any unprotected anal intercourse (UAI) in the past 3 mos with an outside partner of discordant or unknown HIV serostatus (UAI: 0=no; 1=yes) onto the agreement communication and efficacy latent factors
- Convergent and divergent validity assessment via correlations with other psychosocial measures.

Results

Sample Characteristics

N=1001 men who reported having an agreement with their primary partner regarding sex with outside partners

Race/Ethnicity	– White: 65.4%
	– Black: 9.4%
	– Hispanic: 11.5%
	– Asian/Pacific Islander: 6.6%
	– Other/Mixed: 7.1%
Length of primary relationship	– Mean: 6.6 yrs (Range=3 mos–48 yrs)
	– Median: 3.5 years
HIV serostatus	– 32% HIV-positive
	– Couple serostatus type: <ul style="list-style-type: none">• 57% HIV-negative concordant• 22% HIV-discordant• 21% HIV-positive concordant
Agreement type	– No sex allowed with outside partners: 49%
	– Sex with outside partners allowed, with restrictions: 41%
	– Sex w/outside partners allowed, no restrictions: 10%
Age	– Mean: 40.9 yrs (Range=18–79 yrs)
	– Median: 40 yrs

Agreement Efficacy.

Statistic	Value	Sample Items
TLI	.995	How confident are you that you can honor your current agreement?
RMSEA	.189	How easy is it for you to keep your current agreement?
SRMR	.029	
Alpha	.93	

Agreement Communication.

Statistic	Value	Sample Items
TLI	.988	Importance: How important is it to talk to your primary partner about your current agreement?
RMSEA	.101	Barriers: How difficult is it to talk to your primary partner about your current agreement?
SRMR	.028	
Alpha (Importance)	.80	
Alpha (Barriers)	.75	
r(Importance, Barriers)	.17	

Predictive Validity

- **Agreement efficacy**
 - Negatively associated with broken agreements (OR=0.64; 95% CI=0.58, 0.71)
 - Negatively associated with UAI (OR=0.83; 95% CI=0.75, 0.92)
- **Communication importance**
 - Positively associated with broken agreements (OR=1.18; 95% CI=1.05, 1.32)
 - Negatively associated with UAI (OR=0.88; 95% CI=0.78, 0.998)
- **Barriers to discussing the agreement**
 - Not associated w/broken agreements (OR=0.95, 95% CI=0.86, 1.05)
 - Not associated with UAI (OR=1.06, 95% CI=0.95, 1.19)

Correlations of Subscales with Known Survey Instruments used in Dyadic Research

Scale factors are moderately correlated with well-known relationship survey instruments, suggesting efficacy, communication importance, and communication barriers are unique constructs.

Scale	Author	Efficacy	Importance	Barriers
Miller Social Intimacy Scale	Miller, 1982	.37	.36	.39
Dyadic Consensus	Spanier, 1976	.33	.26	.24
Dyadic Satisfaction	Spanier, 1976	.39	.24	.37
Kansas Marital Satisfaction Scale	Schumm et al., 1986	.36	.26	.33
Commitment	Kurdek, 1996	.38	.27	.33
Attachment	Kurdek, 1996	.25	.31	.22
Autonomy	Kurdek, 1996	-.05	-.003	.003
Equality	Kurdek, 1996	.33	.27	.33
Trust	Rempel, Holmes & Zanna, 1985	.33	.19	.34
Social Provisions Scale	Cutrona & Russell, 1987	.34	.26	.34
HIV-specific Social Provisions Scale	Darbes, 2005	.32	.29	.33
UCLA Loneliness Scale	Russell, Peplau & Cutrona, 1983	-.10	-.14	-.20
CES-D Scale (Depression)	Radiloff, 1977	-.22	-.08	-.30
Anxiety	Derogotis, 1983	-.19	-.08	-.25
Hostility	Derogotis, 1983	-.19	-.03	-.24

Limitations

- Non-probability sample
- Cross-sectional measurement

Future Directions

- Add additional items to the Communication Barriers subscale
- Replicate and extend these findings using longitudinal data

Conclusions

- Results suggest a valid and reliable scale measuring the perceived efficacy of agreements and the importance of communication about agreements regarding sex with outside partners for gay male couples. Psychometric analyses suggest that these latent factors are unique psychological constructs.
- Agreement efficacy is negatively associated with broken agreements and negatively associated with UAI with outside partners of discordant or unknown HIV status.
- Importance of communicating about the agreement is positively associated with broken agreements and negatively associated with UAI with outside partners of discordant or unknown HIV status.

Prevention Implications

- By giving couples tools to boost and maintain agreement efficacy and elevate the perceived importance of communicating about the agreement, it might be possible to lower HIV risk with outside sexual partners.
- Understanding agreement formation, perceptions, and maintenance in gay male couples is an important tool in preventing new HIV infections.

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