

Alternatives to Monogamy Among Gay Male Couples in a Community Survey: Implications for Mental Health and Sexual Risk

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Abstract Researchers have documented the psychological and physical health benefits of being in a relationship among heterosexuals, although there has been limited research to examine such benefits among gay and bisexual men. Gay and bisexual men demonstrate considerable variety in the nature of their relationships, particularly in terms of the degree to which they are monogamous. In order to better understand the psychological and behavioral impact of same-sex relationships on the health of gay and bisexual men, demographic characteristics, psychological factors, sexual behavior, and substance use data were examined in a sample of 819 gay and bisexual men who self-identified as *single* ($n = 503$) or were

classified as being in *monogamous* ($n = 182$), *open* ($n = 71$) or *monogamish* ($n = 63$) relationships. Monogamish relationships were those in which both men have agreed that any sexual activity with casual partners must happen when both members of the couple are present and involved (e.g., “threeways” or group sex). Findings indicated that being in a same-sex relationship had health benefits compared to being single among gay and bisexual men. Men in monogamous relationships reported the least amount of substance use compared to all other groups, and less substance use during sex than single men or men in open relationships. Men in monogamish relationships demonstrated psychological and sexual health benefits relative to single men and men in open relationships. Gay and bisexual men in monogamish relationships more closely resembled those in monogamous relationships, in terms of psychological and sexual health benefits, rather than men in open relationships, suggesting that varying forms of non-monogamy should be explored for their relevance to health behaviors.

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Introduction

Research indicates that being in a relationship improves both psychological and physical health (Robles & Keicolt-Glaser, 2003; Wilson & Oswald, 2002). However, most of this research has examined only monogamous heterosexual relationships. Limited research has explored the benefits of partnered relationships among gay men, and even less research has explored these associations within different gay male relationship arrangements (e.g., sexually monogamous versus sexually open relationships). Research on these topics is needed insofar as gay men commonly report engaging in both conventional (monogamous)

and non-conventional (non-monogamous) relationship arrangements (LaSala, 2005). Here, we examined whether the benefits of partnership extend to gay male couples and, further, if they were exclusive to sexually monogamous arrangements.

Much evidence supports the physical and psychological benefits of being in a partnered, heterosexual relationship (Shoenborn, 2004), particularly for men (Ross, Mirowsky, & Goldstein, 1990). Partnered or married heterosexuals report better physical health (Manzoli, Lamberto, Villari, Pirone, & Boccia, 2007; Ross et al., 1990; Williams & Umberson, 2004), less psychological distress (Horwitz, White, & Howell-White, 1996), less depression (Hyoum & McKenry, 2002; Lamb, Lee, & DeMaris, 2003), and overall greater life satisfaction and happiness (Mastekaasa, 1992) compared to single heterosexuals. On average, partnered individuals also report engaging in fewer unhealthy behaviors (e.g., substance use, alcohol consumption) than singles (Duncan, Duncan, & Strycker, 2006; Fendrich & Vaughn, 1994). Those with partners also have significantly lower mortality rates than their single counterparts (Johnson, Backlund, Sorlie, & Loveless, 2000). Likely, these positive effects are moderated by relationship characteristics and quality. Converging evidence indicates the health benefits of partnership may not extend to those in *unhappy* partnerships. In fact, individuals reporting negative relationship dynamics or relationships dissatisfaction are more likely to have lower clinical and self-reported health measures, lower satisfaction with life, and higher mortality rates than those in healthier relationships (Coyne et al., 2001; Friedman et al., 1995; Holt-Lunstad, Birmingham, & Jones, 2008). At present we know the positive effects of partnership on well-being are not culture-specific. Diener, Gohm, Suh, and Oishi (2000) found only small effect sizes of culture on individuals' overall positive experience of marriage. As the benefits of partnership generalize across cultures, it is possible they also generalize across sexual orientation.

There is very little research comparing the psychological health of partnered versus single gay and bisexual men. In the Urban Men's Health Study, researchers found that partnered MSM reported less distress and depression than single MSM (Mills et al., 2004). To date, no studies have been published testing the specific hypothesis that partnered and single gay and bisexual men will report differential psychological health. Similarly, most behavioral health indices (e.g. substance use rates) have not been compared among single and partnered gay and bisexual men. Given the findings that partnership is associated with psychological and behavioral health benefits among heterosexuals, it is reasonable to believe partnered gay and bisexual men will report similar health benefits when compared to single gay and bisexual men.

Available evidence suggests that gay male relationships have the potential for some behavioral health risks, particularly related to HIV. This research has shown consistently that gay men in relationships report more unprotected anal intercourse (UAI) with their primary partner than single men report with

their casual male partners (Crepaz et al., 2000; Koblin et al., 2003). One might traditionally think that UAI in the context of a relationship (versus with casual partners) might lower one's risk for HIV; however, a study by Sullivan, Salazar, Buchbinder, and Sanchez (2009) found that 52–75% of new HIV infections among gay and bisexual men could be traced back to main partners. Taken together, available evidence suggests that relationship status may result in a unique set of psychological and behavioral benefits and risks for gay couples, underscoring the need for research which examines psychological and behavioral correlates of relationships in this population.

One qualitative study demonstrated that some male same-sex couples enacted relationship arrangements typically not implemented by heterosexual couples (LaSala, 2004). This research has considered two distinct relationship arrangements within gay male partnerships—*monogamous*, in which neither man in the couple engages in sexual activity with other partners, and *open*, in which both partners can engage in sex outside the relationship. Open relationships are often explicit, in which both partners have clearly communicated the rules, or lack of rules, regarding sex with others. However, a third relationship arrangement has been observed but not well described in the literature. We call this relationship arrangement *monogamish* (Parsons & Grov, in press), which includes partners that agree to have sex outside the relationship only while together (via threesomes or group sex activities in which both members of the couple are present). The term monogamish is used to represent a relationship status which is closer to monogamy than open, and is, in part, based on the work of Stacy (2011), who has argued that gay men can be “faithful” to their partners while still sexual with others. Gay men in monogamish relationships are able to have sexual relations with men other than their primary partner, but because they engage in these relations with their partner present, it does not constitute infidelity. Preliminary research indicates that men in gay relationships characterized by open arrangements report similarly high levels of relationship quality and satisfaction as men in monogamous partnerships with other men (LaSala, 2005). However, research is needed to replicate and extend these findings, as well as to examine the nature of monogamish relationships.

Research suggests that an understanding of the psychological and behavioral health correlates of relationship arrangements among gay and bisexual men should take into account both age and HIV status. Increasing age has been associated with improvements in depression, anxiety, anger, emotional responsiveness, and self-esteem among gay and bisexual men (Bybee, 2009), as well as increased social (Kertzner, 2009) and psychological (Halpin, 2004) well-being. Increasing age has also been associated with decreased use of substances (Lim et al., 2010) and reduced risk of contracting HIV (CDC, 2008, 2009; Lim et al., 2010; Sullivan et al., 2009). HIV status has also been associated with increased psychiatric morbidity (Cochran, 2009), including increased depression and anxiety (Ciesla & Roberts, 2001) as well as increased substance use (Greenwood

et al., 2001) and sexual risk taking (Van de Ven, Prestage, Crawford, Grulich, & Kippax, 2000).

Therefore, converging evidence suggests that partnered gay and bisexual men may experience a unique set of psychological and behavioral health benefits and risks; however, few studies have thoroughly investigated partnership benefits among partnered gay and bisexual men by comparing them to single men. Further, few studies have considered that gay and bisexual men enact various sexual relationship arrangements that differ from the conventional, relationship arrangement of monogamy, and that these arrangements may be associated with unique risks and benefits with regard to well-being and sexual risk taking behavior.

The purpose of this study was to compare single and partnered gay and bisexual men in three different sexual relationship arrangements on measures of psychological well-being and health behavior. Consistent with past findings that report overall positive effects of partnership, we predicted a main effect for partnership, such that men in relationships would report significantly better scores on measures of psychological well-being, regardless of sexual relationship arrangement. We also anticipated that sexual behavior with casual partners would vary across relationship arrangement groups in ways that validated our classification scheme (i.e., distinguishing between open vs. monogamish forms of non-monogamy). Specifically, we anticipated that open men would have an increased odds of sex with a casual partner compared with monogamish men (because open men are able to engage in sex with casual partners both with and without their main partners) while monogamish men would have an increased odds of having sex with a casual partner while their main partner is present relative to open men (since this is the only avenue by which monogamish men may have sex with casual partners). Due to the need for partner presence and consent, we anticipated that the odds of UAI for monogamish men would be lower than that of open men or single men. Because the demand characteristics of monogamous and open relationships are clear (monogamous men cannot have casual partner sex without violating their perceived arrangement while open men can), we predicted that open and monogamous men would experience lower levels of psychological conflict around sex with casual partners compared with monogamish men (who must negotiate casual partner sex with their main partner in order to avoid violations of their arrangement). Finally, with regard to substance use, we predicted that, consistent with the more restrictive nature of monogamous and monogamish relationships, men in these relationships would be less likely to use substances and less likely to use substances during sex than open or single men.

Method

Participants

In 2008, a cross-sectional, street-intercept method (Miller, Wilder, Stillman, & Becker, 1997) was adapted to survey 927

gay and bisexual men at a series of gay, lesbian, and bisexual (GLB) community events in New York City through the Sex and Love Study version 7.0 (Groves, Parsons, & Bimbi, 2010; Pantalone, Bimbi, Holder, Golub, & Parsons, 2010; Parsons & Bimbi, 2007). This approach to collecting data has been used in numerous studies (Carey, Braaten, Jaworski, Durant, & Forsyth, 1999; Chen, Kodagoda, Lawrence, & Kerndt, 2002; Kalichman & Simbayi, 2004), including those focused on GLB persons (Benotsch, Kalichman, & Cage, 2002; Benotsch et al., 2011; Kalichman et al., 2001), and has been shown to provide data that are comparable to those obtained from other more methodologically rigorous approaches, such as time–space sampling and random digit dialing (Halkitis & Parsons, 2002).

Procedure

At each community event, the research team hosted a booth, and a member of the research team actively approached each person who passed the booth. Information about the project was given to all potential participants followed by an invitation to participate. This active approach resulted in a high response rate (85.2%). Consenting individuals were then given a questionnaire on a clipboard that took 15–20 min to complete. Participants were advised to complete the questionnaire away from others to ensure confidentiality and were not asked to provide any personal identifying information. Participants deposited their own completed questionnaire into a secure box at the booth. As an incentive, participants were given a voucher for free admission to a movie. Survey data were entered into an SPSS database and verified by project staff for accuracy. All procedures were reviewed and approved by the Institutional Review Board of the first author.

Measures

Demographics, Sexual Behavior, and Substance Use

Participants indicated their age, sexual identity, race and ethnicity, HIV serostatus (positive, negative, unknown), education level (high diploma or less, 2 or 4 year college degree, or graduate degree), income level, and work status. Participants also provided information related to relationship status (single, partnered), duration of relationship (in months), and any agreements about sex outside of a primary relationship (i.e., neither of us has sex with others, only I have sex with others, he has sex with others, I do not, etc.). Finally, participants were asked to provide information about their sexual behaviors with casual partners and substance use (separately and in conjunction with sex) in the past 3 months. High risk sexual behavior was operationalized as either receptive or insertive UAI with a casual partner. Low risk sexual behavior was operationalized as either receptive or insertive anal intercourse with a casual partner that included a condom.

Relationship Arrangement

Relationship arrangement was determined based upon responses to questions related to relationship status, sex outside of the relationship, and sexual behavior with casual sex partners. Men categorized as single ($n = 503$) indicated they did not have a main partner. Men categorized as monogamous ($n = 182$) indicated they and their partner agreed to have sex only with each other and these individuals reported no sex with casual partners. Men categorized as monogamish ($n = 63$) indicated they and their partners agreed to have sex with casual partners, but only when the other member of the relationship was present. This category also included men who self-identified as monogamous but also reported having sex with a casual partner with their main partner present. Men categorized as open ($n = 71$) indicated that they and their partner have sex with casual partners without the other partner present. A number of participants ($n = 92$) could not be categorized on this index because they provided incomplete responses, reported they did not know whether their partner engaged in sex with casual partners, or because their response combinations did not permit classification. As a result of this classification scheme, those men who

indicated that their relationship was monogamous, but reported sex with casual partners in the past 30 days were excluded ($n = 10$) as were 6 participants who reported transgendered partners. All participants reported that the gender of their partner was male. Table 1 provides demographic information for the total sample and each relationship arrangement separately.

As a note, these arrangement classifications were not based on the perception of both members of the couple. They were, therefore, representative only of the impressions and behaviors of the individual partnered men surveyed. In this way, they allow an examination of how *perceived* relationship arrangement was associated with psychological and behavioral variables. These data do not allow for an examination of dyadic agreement. It cannot be assumed that these classifications represent explicitly negotiated agreements. Similarly, it should not be assumed that arrangement impressions were identical across dyad members.

Life Satisfaction

The 5-item Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) assessed a participant's level of global satisfaction with his life. Sample items include "In most

Table 1 Demographic characteristics

	Single	Monogamous	Open	Monogamish	Test statistic
Age (in years), <i>M</i> (<i>SD</i>)	38.39 (12.70)	38.73 (12.76)	41.06 (11.25)	39.05 (9.54)	$F(3, 829) < 1$
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
	503 (61.4)	182 (22.2)	71 (8.7)	63 (7.7)	
Race and ethnicity					
White	286 (56.9)	101 (55.5)	50 (70.4)	46 (73.0)	$\chi^2(9) = 16.26$
African American	87 (17.3)	24 (13.2)	8 (11.3)	5 (7.9)	
Latino	76 (15.1)	38 (20.9)	9 (12.7)	9 (14.3)	
Other	54 (10.7)	19 (10.4)	4 (5.6)	3 (4.8)	
Sexual identity					
Gay	460 (91.5)	170 (93.4)	67 (94.4)	58 (92.1)	$\chi^2(3) = 1.22$
Bisexual	43 (8.5)	12 (6.6)	4 (5.6)	5 (7.9)	
HIV status					
Positive	79 (15.7)	27 (14.8)	15 (21.1)	12 (19.0)	$\chi^2(3) = 1.98$
Negative/unknown	424 (84.3)	155 (85.2)	56 (78.9)	51 (81.0)	
Months of current relationship		72.51 (87.11)	100.38 (79.60)	75.28 (87.15)	$F(2, 313) = 2.74$
Education					
High school diploma or less	143 (28.9)	48 (26.5)	18 (25.7)	15 (25.0)	$\chi^2(6) = 2.11$
2 or 4 year degree	234 (47.4)	89 (49.2)	31 (44.3)	31 (51.7)	
Graduate degree	117 (23.7)	44 (24.3)	21 (30.0)	14 (23.3)	
Income					
<20,000	91 (18.3)	31 (17.1)	7 (10.1)	7 (11.3)	$\chi^2(12) = 16.11$
20,000–39,000	119 (23.9)	46 (35.4)	12 (17.4)	12 (19.4)	
40,000–59,000	109 (21.9)	35 (19.3)	12 (17.4)	13 (21.0)	
60,000–79,000	70 (14.1)	22 (12.2)	16 (23.2)	14 (22.6)	
80,000 or more	109 (21.9)	47 (26.0)	22 (31.9)	16 (25.8)	

Note: No statistically significant differences were found in the demographic comparisons across groups

ways, my life is close to ideal” and “The conditions of my life are excellent.” Participants indicated their level of agreement with each statement on a Likert Scale (1 = strongly disagree; 7 = strongly agree, $\alpha = .88$).

Depression

Symptoms of depression were assessed using an 8-item (brief) version of the Center for Epidemiological Studies Depression (B-CESD) Scale (Radloff, 1977). Items included “I felt depressed” and “I had crying spells.” Participants indicated the frequency with which they experienced each symptom using a 4-point scale (1 = rarely; 4 = most or all of the time, $\alpha = .89$).

Sexual Conflict

Sexual conflict refers to the degree of uncertainty a participant experienced around a sexual decision (i.e., the decision to use condoms during sex or the decision to engage in sex with a casual partner). High levels of conflict indicate how much difficulty a participant had in coming to a decision about whether to engage in a behavior. They do not indicate what behavior the participant chose to engage in, only the degree of difficulty in deciding about the behavior. Previous literature examining the association between alcohol, inhibition conflict, and sexual behavior has often used the Sexual Conflict Scale (Dermen & Cooper, 2000). We modified this 3-item sexual conflict metric to assess levels of conflict around sex with casual partners generally (i.e., casual sex conflict) and using a condom during sex (i.e., risky sex conflict) (Wells, Golub, & Parsons, 2011). Participants therefore responded to 6 items in total, three worded to assess casual sex conflict and three worded to assess risky sex conflict. For each type of conflict, this 3-item measure assessed the extent to which participants “had a hard time deciding...”, “felt very unsure...” and “felt very undecided...” about a given behavior. Participants indicated their level of agreement on a Likert-type scale from 1 (“strongly disagree”) to 6 (“strongly agree”). The scale demonstrated adequate reliability (casual sex conflict $\alpha = .95$, and risky sex conflict $\alpha = .92$).

Results

Participant Characteristics

Table 1 shows the demographic characteristics by various relationship arrangements. Participants included 819 gay and bisexual identified men who were categorized as single (61.4%), monogamous (22.2%), open (8.7%) or monogamish (7.7%). Among those men in a relationship ($n = 316$), 57.6% were monogamous, 22.4% were open, and 20% were monogamish. Relationship arrangement groups did not differ significantly in terms of age, self-reported HIV-status, sexual

identity or education. There was no significant difference in length of relationship for men in the three different types of partnerships. Men in open and monogamish relationships were significantly more likely to have earned more than \$40,000 per year compared with single men and those in monogamous relationships. No significant differences were found in the racial composition of relationship arrangement groups when race and ethnicity were examined using four categories (Black, White, Latino and Other); however, men in open and monogamish relationships were significantly more likely to be White when all non-White categories were combined, $\chi^2(3) = 10.82, p = .01$.

Psychological Health Outcomes

Both depression and life satisfaction were continuous and normally distributed outcomes. Analyses of covariance were conducted to examine relationship arrangement group differences after controlling for age and HIV status. Least significant difference (LSD) post hoc tests were used to evaluate differences in marginal means.

ANCOVA results are shown in Table 2. Neither age nor HIV status was associated with depression or life satisfaction in the ANCOVA models. After adjusting for age and HIV status, depression scores differed across relationship arrangement category, $F(3, 796) = 3.58, p = .01$, as did life satisfaction, $F(3, 797) = 5.70, p < .01$. Men in monogamish relationships had significantly lower depression scores and higher life satisfaction scores compared to single men. For depression, monogamous and open men did not differ from either single men or monogamish men; for life satisfaction, single men and monogamous men did not differ from one another, and those in open relationships did not differ from any of the other three groups.

Sexual Decision Making

Conflict around sex with casual partners and conflict around condom use during sex were continuous and normally distributed. Group differences were evaluated using ANCOVA as described previously. For dichotomous variables, relationship arrangement group differences were evaluated by specifying a logistic regression model, which controlled for age and HIV status. Post hoc comparisons between relationship arrangement groups were examined to evaluate differences in adjusted odds ratios.

ANCOVA results revealed that age and HIV status were not significantly associated with conflict related to sex with casual partners. After accounting for age and HIV status, relationship arrangement was significantly associated with conflict, $F(3, 784) = 5.27, p < .01$. Men in monogamous and open relationships reported significantly less conflict with regard to decisions about sex with casual partners compared with monogamish and single men. In contrast, age and HIV status were associated with conflict regarding risky sex. Older individuals reported higher levels of conflict about condom use and HIV

Table 2 Psychological and sexual decision making outcomes across relationship arrangement

Outcome	Independent variables			Test statistic	Covariates		
	Single	Monogamous	Open		Monogamish	Age	HIV status
	M (SE)	M (SE)	M (SE)		M (SE)	B	B
Psychological variables (range)							
B-CESD (1–4)	1.68 (.03) ^a	1.57 (.05) ^{ab}	1.61 (.08) ^{ab}	1.43 (.08) ^b	.002	-.002, .01	-.15, .08
Life satisfaction (1–7)	4.62 (.05) ^a	4.82 (.09) ^a	4.93 (.15) ^{ab}	5.20 (.15) ^b	-.004	-.01, .003	-.23, .22
Sexual decision making							
Risky Sex Conflict Scale (1–6)	2.01 (.06)	1.82 (.11)	1.93 (.17)	1.78 (.17)	.01**	.004, .02	-.34**
Casual Sex Conflict Scale (1–6)	2.63 (.07) ^a	2.15 (.12) ^b	2.13 (.19) ^b	2.37 (.19) ^{ab}	.01	-.001, .02	-.29, .30

Note. Test statistic shows the significance of differences among the adjusted marginal means (after regression on covariates). Within variables, values having different superscripts differ significantly at $p < .05$ by LSD post hoc
 *** $p < .01$

negative serostatus was associated with decreased conflict about condom use. After adjusting for age and HIV status, no significant relationship arrangement differences were observed, $F(3, 783) = 1.14$ (see Table 2).

Sexual Health Outcomes

To assess differences among partnership types on dichotomous behavioral data, we conducted logistic regression, followed by post hoc pairwise comparisons adjusting for covariates. These analyses resulted in exponentiated betas associated with each covariate, and adjusted odds for each partnership type. The adjusted odds represent the odds of engaging in the given behavior for an individual of that partnership type, after adjusting for age and HIV-status. This procedure is analogous to the ANCOVA approach taken with continuous data above, but it used a link-function to estimate latent odds, as appropriate for a dichotomous distribution. Monogamous men were excluded from these analyses because no men in the monogamous category-by definition-indicated any sexual activity with casual partners. Those who did were excluded from the category. Sexual activity that violates one’s perceptions of relationship arrangement may differ from that which does not. We acknowledge the importance of exploring factors that violate arrangements, but lacked the statistical power to do so here.

Logistic regression results revealed that HIV negative status was significantly associated with increased odds of having sex with both a main and casual partner together; age was not. After adjusting for age and HIV status, relationship arrangement was significantly associated with the odds of having sex with both a main and casual partner together, $Wald \chi^2(1) = 8.05, p < .01$. Monogamish men had significantly higher odds of sex with both a main and casual partner together compared to open men. Older age was significantly associated with a decreased odds of having any sex with a casual partner; HIV status was not. After adjusting for age and HIV status, relationship arrangement was significantly associated with the odds of sex with a casual partner, $Wald \chi^2(3) = 22.27, p < .01$. Monogamish men were less likely than open men to have had sex with a casual partner. HIV negative status was significantly associated with lower odds of UAI with a casual partner; age was not. Monogamish men were less likely than either open or single men to have engaged in UAI with a casual partner, $Wald \chi^2(2) = 11.54, p < .01$ (see Table 3).

Substance Use in the Context of Sexual Behavior

Logistic regression results revealed that age and HIV status were significantly associated with decreased odds of substance use in the past 3 months. After controlling for age and HIV status, relationship arrangement was significantly associated with drug use in the past 3 months, $Wald \chi^2(3) = 16.39, p < .01$, in that monogamous men were less likely than all other groups to have used any substances. Similarly, age and HIV negative serostatus were

Table 3 Sexual behavior and substance use outcomes across relationship arrangement

Outcome	Independent variables			Test statistic	Covariates			
	Single	Monogamous	Open		Age	HIV status		
	Adj odds (SE)	Adj odds (SE)	Adj odds (SE)		expB	95% CI	95% CI	
Sexual behavior and sexual health								
Any sexual activity w/main and casual partner	NA	NA	.47 (.06)	$Wald \chi^2(1) = 8.05, p < .01$	1.00	.97, 1.04	2.88**	1.15, 7.20
Any anal sex with a casual partner	.65 (.02) ^a	NA	.60 (.06) ^a	$Wald \chi^2(2) = 22.27, p < .01$	.98**	.97, .99	.63	.39, 1.01
UAI with a casual partner	.36 (.02) ^a	NA	.35 (.06) ^a	$Wald \chi^2(2) = 11.54, p < .01$	.99	.97, 1.00	.35**	.22, .56
Substance use in the context of sexual behavior								
Used any drugs in the past 3 months	.12 (.02) ^a	.05 (.02) ^b	.14 (.04) ^a	$Wald \chi^2(3) = 16.39, p < .01$	.96**	.94, .98	.45**	.26, .77
Used drugs with sex	.19 (.02) ^a	.12 (.03) ^b	.27 (.06) ^a	$Wald \chi^2(3) = 8.80, p = .03$	.97**	.96, .99	.37**	.24, .59
Used alcohol with sex	.48 (.02)	.46 (.04)	.56 (.06)	$Wald \chi^2(3) = 5.65$	.96**	.95, .97	.81	.53, 1.23

Note. Test statistic shows the significance of differences among the adjusted odds ratios (after regression on covariates). Within variables, values having different superscripts differ significantly at $p < .05$ by LSD post hoc

** $p < .01$

associated with decreased odds of drug use during sex in the past 3 months. After adjusting for age and HIV status, relationship arrangement was significantly associated with drug use during sex in the past 3 months, $Wald \chi^2(3) = 8.80, p = .03$, such that monogamous men were less likely than single men and men in open relationships to have used drugs during sex. Monogamish men did not differ from any of the groups with regard to sex under the influence of illicit drugs. Age was significantly associated with the odds of alcohol use during sex; HIV status was not. After adjusting for age and HIV status, relationship arrangement was not significantly associated with alcohol use during sex, $Wald \chi^2(3) = 5.65$.

We examined the issue with cell size differences between groups (e.g., 61.4% of the men were single) and examined the influence of power on analyses performed in two ways. First, weighted post hoc contrasts were conducted, and the same pattern of results were obtained. Second, analyses were conducted with random subsets of single men (with a sample size more in line with those of the other groups), and the results obtained were comparable.

Discussion

Overall, this preliminary study suggests that there were differences across types of same-sex male relationships and that a simple dichotomy of monogamous versus non-monogamous may be insufficient to fully explain relationship differences. Several differences across relationship agreement groups were identified with regard to psychological and sexual health and substance use, after controlling for HIV status and age of participants. Further, the study supports the notion that being in a relationship—regardless of the nature of the agreements for sex outside the relationship—provides protective health benefits to gay and bisexual men.

Being in a monogamous relationship was associated with benefits in terms of reduced substance use and reduced sexual health risks. Monogamous men reported the least amount of illicit drug use compared to all other men, and less drug use during sex than single men and men in open relationships. In addition, because men in monogamous relationships did not report sex with casual partners, by default they reported no sexual health risks outside of their relationship.

Men in monogamish relationships demonstrated significant benefits relative to both single men and men in open relationships and, in fact, resembled men in monogamous relationships much more so than men in open relationships, adding justification for our use of the term “monogamish.” Monogamish men, in analyses controlling for HIV status and age, showed lower rates of depression and higher life satisfaction compared to single men, suggesting that relationships in which gay couples mutually agree to engage in sexual activity with casual partners together can be quite psychologically healthy. After

adjusting for age and HIV status, monogamish and monogamous men differed only in terms of their conflict around casual sex, which is likely due to the clear demand characteristics expected among gay and bisexual men in relationships who have agreed to remain monogamous and not pursue sex with casual partners.

Monogamish men were significantly less likely than both open and single men to report unprotected anal sex with a casual partner. It is possible that engaging in sexual activity with casual partners as a couple, as is the case in monogamish arrangements, serves a protective function in terms of minimizing the likelihood of unprotected anal sex with casual partners. Although monogamous men were the least likely to report using recreational drugs in the past 3 months and before/during sex, neither monogamish nor open men reported higher rates of drug use in the past 3 months or drug use with sex than single men, suggesting that, while these relationships were not protective, they also did not appear to facilitate substance use relative to single status. This was further evidenced by the absence of relationship arrangement group differences in the odds of alcohol use during sex in the past 3 months.

Results suggest that the distinction between open and monogamish relationships is useful. Monogamish relationships were associated with a larger number of indicators of psychological and sexual health relative to open relationships. Although previous research has shown that heterosexuals in partnered relationships have less psychological distress and more life satisfaction than single heterosexuals (Horwitz et al., 1996; Mastekaasa, 1992), the present study showed that these benefits differed among partnered gay men depending on the nature of their relationship. Previous studies, which found no difference in level of life satisfaction between monogamous and non-monogamous men (Kurdek, 1988; LaSala, 2005; Peplau, 1981), did not separate out those who were in open versus monogamish relationships, and thus were unable to identify potential differences.

A substantial number of same-sex male couples have arrangements that are outside of traditional conventions of monogamy. Of the partnered men in the sample, 42.2% were either in open or monogamish relationships. White men, compared to men of color, were more likely to report being in an open or monogamish relationship. It is possible that gay men of color are more focused on having monogamous relationships due to cultural differences, such as greater traditional perceptions of relationships and more conservative gender roles and notions of masculinity which are more prevalent among African-American (Levant, Majors, & Kelley, 1998; Pleck, Sonenstein, & Ku, 1994) and Latino (Neff, Prihoda, & Hoppe, 1991) men. More research, however, is needed to better understand the cultural differences in the various types of same-sex male relationships.

There were a number of limitations to the study. The sample may not be generalizable as all data were gathered from gay and bisexual men living in New York City and all participants were recruited from large-scale community-based gay/bisexual events.

As participants were recruited individually, we do not have couple-level data in which to verify relationship type or compare behaviors. Due to the nature of the community events at which data were gathered, it is possible that two members of the same couple completed the survey separately; however, we were unable to link (and adjust for) data in such cases. In an effort to rapidly engage participants, many questions were closed-ended or had simple response options. As such, sexual risk behaviors were examined dichotomously; it is possible that there may be more differences in sexual risk across different types of gay relationship arrangements in terms of frequency of acts. In addition, we did not collect data with regard to female casual partners or main partners. There may be important differences in factors associated with behavior with female partners and recent findings have indicated the importance of sexual behavior with main partners (Sullivan et al., 2009). However, these data were collected before the recent findings regarding HIV risk via main partners were published. Furthermore, as these analyses drew from cross-sectional data, causality between variables should not be inferred. Future efforts to better understand the varied types of gay male non-monogamous relationships should be both longitudinal, to explore the evolution of relationship arrangements (e.g., do couples begin monogamous, then progress to being monogamish, and then to being open), and should include both members of the couple in order to better understand the connection between relationship type and outcomes of interest.

This study represents an exploration of how an individual's perception of couple arrangement was associated with psychological and behavioral outcomes. Data support the conclusion that, among gay and bisexual men in New York City, open and monogamish relationships categories have some meaningful distinctions, and that researchers should attend to variations in relationship arrangement when studying non-monogamous couples so as to not miss these differences. These findings underscore the assertions of LaSala (2005), who encouraged clinicians to be flexible in their ideas about traditional monogamy. They were also consistent with Ritter and Terndrup (2002), who cautioned clinicians to be sensitive to the fact that monogamy may be valued more among heterosexual compared to gay male couples. Clinicians working with gay and bisexual men should be aware of the fact that not all relationship arrangements are associated with the same degree of psychological and behavioral health and risk. Given that arrangements were associated with a variety of factors, interventions to reduce substance use and sexual risk among partnered gay men should be tailored to address the unique strengths and vulnerabilities of these interpersonal contexts. Monogamy and non-monogamy among gay male couples is complicated and cannot be reduced to a simple question of whether or not one has sex only with their primary partner or not. With the recent finding that the majority of new HIV infections among gay and bisexual men occurred in the context of a primary partner relationship (Sullivan et al., 2009), it is even more imperative for sexual health efforts, to understand more

fully gay male relationship dynamics, arrangements, and agreements to identify the individual- and couple-level factors that are driving these seroconversions, and partnered gay and bisexual men who also engage in sexual activity with casual partners are a critical group for the development of innovative and novel HIV prevention efforts.

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References

- Benotsch, E. G., Kalichman, S. C., & Cage, M. (2002). Men who have met sex partners via the Internet: Prevalence, predictors, and implications for HIV prevention. *Archives of Sexual Behavior, 31*, 177–183.
- Benotsch, E. G., Martin, A. M., Espil, F. M., Nettles, C. D., Seal, D. W., & Pinkerton, S. D. (2011). Internet use, recreational travel, and HIV risk behaviors in men who have sex with men. *Journal of Community Health, 36*, 398–405.
- Bybee, J. A. (2009). Are gay men in worse mental health than heterosexual men? The role of age, shame and guilt, and coming-out. *Journal of Adult Development, 16*, 144–154.
- Carey, M. P., Braaten, L. S., Jaworski, B. C., Durant, L. E., & Forsyth, A. D. (1999). HIV and AIDS relative to other health, social, and relationship concerns among low-income women: A brief report. *Journal of Women's Health and Gender Based Medicine, 8*, 657–661.
- CDC. (2008). Trends in HIV/AIDS diagnoses among men who have sex with men—33 States, 2001–2006. *Morbidity and Mortality Weekly Report, 57*, 681–686.
- CDC. (2009). *HIV/AIDS and young men who have sex with men*. Atlanta: Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/healthyyouth/sexualbehaviors/pdf/hiv_factsheet_ymsm.pdf.
- Chen, J. L., Kodagoda, D., Lawrence, A. M., & Kerndt, P. R. (2002). Rapid public health interventions in response to an outbreak of syphilis in Los Angeles. *Sexually Transmitted Diseases, 29*, 285–287.
- Ciesla, J. A., & Roberts, J. E. (2001). Meta-analysis of the relationship between HIV infection and risk for depressive disorders. *American Journal of Psychiatry, 158*, 725.
- Cochran, S. D. (2009). Burden of psychiatric morbidity among lesbian, gay, and bisexual individuals in the California Quality of Life Survey. *Journal of Abnormal Psychology, 118*, 647–658.
- Coyne, J. C., Rohrbaugh, M. J., Shoham, V., Sonnega, J. W., Nicklas, J. M., & Cranford, J. A. (2001). Prognostic importance of marital quality for survival of congestive heart failure. *American Journal of Cardiology, 88*, 526–529.
- Crepaz, N., Marks, G., Mansergh, G., Murphy, S., Miller, L., & Appleby, P. (2000). Age-related risk for HIV infection in men who have sex with men: Examination of behavioral, relationship, and serostatus variables. *AIDS Education and Prevention, 12*, 405–415.
- Dermen, K. H., & Cooper, M. L. (2000). Inhibition conflict and alcohol expectancy as moderators of alcohol's relationship to condom use. *Experimental and Clinical Psychopharmacology, 8*, 198–206.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71–75.
- Diener, E., Gohm, C. L., Suh, E., & Oishi, S. (2000). Similarity of the relations between marital status and subjective well-being across cultures. *Journal of Cross-Cultural Psychology, 31*, 419–436.
- Duncan, T. E., Duncan, S. C., & Strycker, L. A. (2006). *An introduction to latent variable growth curve modeling: Concepts, issues, and applications* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Fendrich, M., & Vaughn, C. M. (1994). Diminished lifetime substance use over time: An inquiry into differential underreporting. *Public Opinion Quarterly, 58*, 96–123.
- Friedman, H. S., Tucker, J. S., Schwartz, J. E., Tomlinson-Keasey, C., Martin, L. R., Wingard, D. L., et al. (1995). Psychosocial and behavioral predictors of longevity: The aging and death of the "termites". *American Psychologist, 50*, 69–78.
- Greenwood, G., White, E., Page-Shafer, K., Bein, E., Osmond, D., Paul, J., et al. (2001). Correlates of heavy substance use among young gay and bisexual men: The San Francisco Young Men's Health Study. *Drug and Alcohol Dependence, 61*, 105–112.
- Grov, C., Parsons, J. T., & Bimbi, D. S. (2010). The association between penis size and sexual health among men who have sex with men. *Archives of Sexual Behavior, 39*, 788–797.
- Halkitis, P. N., & Parsons, J. T. (2002). Recreational drug use and HIV-risk sexual behavior among men frequenting gay social venues. *Journal of Gay & Lesbian Social Services, 14*, 19–38.
- Halpin, S. (2004). Changes in psychosocial well-being during stages of gay identity development. *Journal of Homosexuality, 47*, 109–126.
- Holt-Lunstad, J., Birmingham, W., & Jones, B. (2008). Is there something unique about marriage? The relative impact of marital status, relationship quality, and network social support on ambulatory blood pressure and mental health. *Annals of Behavioral Medicine, 35*, 239–244.
- Horwitz, A. V., White, H. R., & Howell-White, S. (1996). Becoming married and mental health: A longitudinal study of a cohort of young adults. *Journal of Marriage and the Family, 58*, 895–907.
- Hyoun, K., & McKenry, P. (2002). The relationship between marriage and psychological well-being. *Journal of Family Issues, 23*, 885–911.
- Johnson, N. J., Backlund, E., Sorlie, P. D., & Loveless, C. A. (2000). Marital status and mortality: The National Longitudinal Mortality Study. *Annals of Epidemiology, 10*, 224–238.
- Kalichman, S. C., Benotsch, E., Rompa, D., Gore-Felton, C., Austin, J., Luke, W., et al. (2001). Unwanted sexual experiences and sexual risks in gay and bisexual men: Associations among revictimization, substance use and psychiatric symptoms. *Journal of Sex Research, 28*, 1–9.
- Kalichman, S. C., & Simbayi, L. (2004). Traditional beliefs about the cause of AIDS and AIDS-related stigma in South Africa. *AIDS Care, 16*, 572–580.
- Kertzner, R. M. (2009). Social and psychological well-being in lesbians, gay men, and bisexuals: The effects of race, gender, age, and sexual identity. *American Journal of Orthopsychiatry, 79*, 500–510.
- Koblin, B. A., Chesney, M. A., Husnick, M. J., Bozeman, S., Celum, C. A., Buchbinder, S., et al. (2003). High-risk behaviors among men who have sex with men in 6 US cities: Baseline data from the EXPLORE study. *American Journal of Public Health, 93*, 926–932.
- Kurdek, L. A. (1988). Relationship quality of gay and lesbian cohabiting couples. *Journal of Homosexuality, 15*, 93–118.
- Lamb, K. A., Lee, G. R., & DeMaris, A. (2003). Union formation and depression: Selection and relationship effects. *Journal of Marriage and Family, 65*, 953–962.
- LaSala, M. C. (2004). Extradysadic sex and gay male couples: Comparing monogamous and nonmonogamous relationships. *Families in Society, 85*, 405–412.
- LaSala, M. C. (2005). Monogamy of the heart: Extradysadic sex and gay male couples. *Journal of Gay & Lesbian Social Services, 17*, 1–24.
- Levant, R. F., Majors, R. G., & Kelley, M. (1998). Masculinity ideology among young African American and European American women and men in different regions of the United States. *Cultural Diversity and Mental Health, 4*, 227–236.
- Lim, S. H., Ostrow, D., Stall, R., Chmiel, J., Herrick, A., Shoptaw, S., et al. (2010). Changes in stimulant drug use over time in the MACS:

- Evidence for resilience against stimulant drug use among men who have sex with men. *AIDS and Behavior*, doi:10.1007/s10461-010-9866-x.
- Manzoli, L., Villari, P., Pirone, G. M., & Boccia, A. (2007). Marital status and mortality in the elderly: A systematic review and meta-analysis. *Social Science and Medicine*, *64*, 77–94.
- Mastekaasa, A. (1992). Marriage and psychological well-being: Some evidence on selection into marriage. *Journal of Marriage and the Family*, *54*, 901–911.
- Miller, K. W., Wilder, L. B., Stillman, F. A., & Becker, D. M. (1997). The feasibility of a street-intercept survey method in an African-American community. *American Journal of Public Health*, *87*, 655–658.
- Mills, T. C., Paul, J., Stall, R., Pollack, L., Canchola, J., Chang, Y. J., et al. (2004). Distress and depression in men who have sex with men: The Urban Men's Health Study. *American Journal of Psychiatry*, *161*, 278.
- Neff, J. A., Prihoda, T. J., & Hoppe, S. K. (1991). Machismo, self-esteem, education and high maximum drinking among Anglo, Black and Mexican-American male drinkers. *Journal of Studies on Alcohol*, *52*, 458–463.
- Pantalone, D. W., Bimbi, D., Holder, C. A., Golub, S. A., & Parsons, J. T. (2010). Consistency and change in club drug use by sexual minority men in New York City, 2002 to 2007. *American Journal of Public Health*, *100*, 1835–1892.
- Parsons, J. T., & Bimbi, D. S. (2007). Intentional unprotected anal intercourse among sex who have sex with men: Barebacking—from behavior to identity. *AIDS and Behavior*, *11*, 277–287.
- Parsons, J. T., & Grov, C. (in press). Gay male identities, desires, and behaviors. In C. J. Patterson & A. R. D'Augelli (Eds.), *Handbook of psychology and sexual orientation*. New York: Oxford University Press.
- Peplau, L. A. (1981). What homosexuals want in relationships. *Psychology Today*, *15*, 28–38.
- Pleck, J. H., Sonenstein, F. L., & Ku, L. C. (1994). Attitudes towards male roles among adolescent males: A discriminant validity analysis. *Sex Roles*, *30*, 481–501.
- Radloff, L. S. (1977). The CES-D scale: A self report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385–401.
- Ritter, K. Y., & Terndrup, A. I. (2002). *Handbook of affirmative psychotherapy with lesbians and gay men*. New York: Guilford Press.
- Robles, T. F., & Keicolt-Glaser, J. K. (2003). The physiology of marriage: Pathways to health. *Physiology & Behavior*, *79*, 409–416.
- Ross, C. E., Mirowsky, J., & Goldsteen, K. (1990). The impact of the family on health: The decade in review. *Journal of Marriage and the Family*, *52*, 1059–1078.
- Shoenborn, C. A. (2004). Marital status and health: United States, 1999–2002. *Advance Data from Vital and Health Statistics* (Vol. 351): CDC.
- Stacy, J. (2011). *Unhitched: Love marriage, and the family values from West Hollywood to western China*. New York: New York University Press.
- Sullivan, P. S., Salazar, L., Buchbinder, S., & Sanchez, T. H. (2009). Estimating the proportion of HIV transmissions from main sex partners among men who have sex with men in five US cities. *AIDS*, *23*, 1153–1162.
- Van de Ven, P., Prestage, G., Crawford, J., Grulich, A. E., & Kippax, S. (2000). Sexual risk behaviour increases and is associated with HIV optimism among HIV-negative and HIV-positive gay men in Sydney over the 4 year period to February 2000. *AIDS*, *14*, 2951–2953.
- Wells, B. E., Golub, S. A., & Parsons, J. T. (2011). An integrated theoretical approach to substance use and risky sexual behavior among men who have sex with men. *AIDS and Behavior*, *15*, 509–520.
- Williams, K., & Umberson, D. (2004). Marital status, marital transitions, and health: A gendered life course perspective. *Journal of Health and Social Behavior*, *45*, 77–94.
- Wilson, C. M., & Oswald, A. J. (2002). *How does marriage affect physical and psychological health? A survey of the longitudinal evidence*. Unpublished manuscript, Department of Economics, University of Warwick.