Same-Sex Cohabitation and Non-Specific Psychological Distress

Dustin C. Brown[†]
Department of Sociology and Population Research Center
The University of Texas at Austin

Hui Liu
Department of Sociology
Michigan State University

Corinne E. Reczek
Department of Sociology
University of Cincinnati

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Interest in sexual minority health has grown considerably in recent years. Despite growing interest in the health of the sexual minority population in the United States, nationally representative data on the gay, lesbian, bisexual, and/or transgender population (GLBT) is scarce. Researchers interested in sexual minority health in the United States traditionally have had to rely on data drawn from qualitative interviews or relatively small non-probability samples (IOM 2011; Patterson 2000). Currently, a handful of relatively small, nationally representative data sources with information on sexual minorities exist[1]. Though these studies contain high-quality data, number of GLBT respondents in these studies often is very small. Out of necessity, researchers interested in the health of sexual minorities recently have begun to exploit data from large-scale household surveys that include information on marriage and cohabitation (IOM 2011; Heck, et al. 2006).

Indeed, this is strategy taken in this paper. The primary purpose of this paper is to examine the relationship between psychological distress and same-sex cohabitation in the United States. We assemble a large, nationally representative sample of same sex couples pool 13 years of cross-sectional data from the National Health Interview Survey (NHIS) and examine differences in psychological distress among same-sex cohabiting, opposite-sex married, opposite-sex cohabiting, divorced, widowed, and never married single individuals. Preliminary analyses suggest that same-sex cohabiters experience higher levels of psychological distress than do opposite-sex married individuals. Moreover, the preliminary results suggest that socioeconomic resources do little mediate this association, particularly among non-Hispanic whites. Finally, the results suggest that differences in distress among same-sex cohabiters and opposite-sex married persons vary across gender and race-ethnicity.

Background

Research indicates that sexual minorities in the United States have an increased risk of experiencing a number of adverse mental health outcomes. Prior research indicates that sexual minorities have higher levels of generalized psychosocial stress, depression, anxiety, and suicidal behaviors when compared to heterosexuals (Cochran and Mays 2006; Herek and Garnets 2007

[1] These include, but are not limited to, the General Social Survey (GSS), National Survey of Families and Households (NSFH), National Health and Nutrition Examination Survey (NHANES III), National Comorbidity Survey (NCS), and the National Epidemiological Survey of Alcohol and Related Conditions (NESARC).

Institute of Medicine 2011; King, et al. 2008; Mayer,et al. 2008). Most researchers assume that is a direct consequence of the stress associated with being a sexual minority in the United States. Attitudes toward homosexuality have changed substantially in recent decades. Nonetheless, homosexual behavior is still highly stigmatized in the U.S. and a longstanding tradition of social science research clearly indicates that stigma is stressful. Consistent with this general view, the "minority stress" model argues sexual minorities often experience more stress over their life course than their heterosexual counterparts as a result of stigmatization (IOM 2011; Brooks 1981; Mayer 1995, 2003). This is important because research in both human and animal models consistently has shown that prolonged exposure to acute and chronic stressors adversely affect the functioning of multiple biological systems involved in the regulation of key cardiovascular, immunological, and metabolic processes (McEwen 1998; McEwen and Stellar 1993; Seeman, et al. 2008). These experiences likely have a cumulative effect on the psychosocial health of sexual minorities. Moreover, sexual minorities who are members of other socially marginalized sub-populations, including racial-ethnic minorities and the socioeconomically disadvantaged, likely experience even higher levels of psychological distress than the sexual minority population as a whole.

The Current Paper

In the proposed paper we evaluate two basic, interrelated relationships. First, we examine the extent to which levels of psychosocial distress vary among same-sex cohabiters, opposite-sex cohabiters, opposite-sex married, divorced, widowed, and never married persons? Consistent with the minority stress model and the findings of prior research on the mental health sexual minority populations (Cochran and Mays 2006; Herek and Garnets 2007 Institute of Medicine 2011; King, et al. 2008; Mayer,et al. 2008) and the effects of marriage in general on psychological well-being (Waite and Gallagher 2000), we anticipate that same-sex couples will likely display higher levels of distress than opposite-sex married persons. However, given the lack of research comparing the mental health of same-sex cohabiters and persons in other relationship statuses, it is difficult to say how same-sex cohabiters will ultimately compare to opposite-sex cohabiting, divorced, widowed, and never married persons. Secondly, we systematically examine gender and race-ethnic differences in psychological distress among same-sex cohabiters, opposite-sex cohabiters, opposite-sex married, divorced, widowed, and

never married persons. Consistent with the minority stress perspective, we expect that same-sex cohabiters who are members of subpopulations who are socio-politically and/or socioeconomically marginalized in other ways, will exhibit the highest overall levels of distress. Prior research indicates that racial and ethnic minorities and socioeconomically disadvantaged populations generally exhibit higher levels of psychological distress than persons in more advantaged subpopulations (Turner and Avison 2003). This is one of the only studies we are aware of to systematically examine gender and race-ethnic differences in psychological distress among same-sex cohabiters.

Data and Methods

We use pooled data from the National Health Interview Survey (NHIS), 1997-2009. The data were obtained from the Minnesota Population Center and State Health Access Data Assistance Center (http://www.ihis.us). The interviews are face to face and the response rate in most years exceeds 95% (NCHS 2000). The NHIS first collected data on cohabitation status in 1997. The NHIS is a nationally representative cross-sectional survey of the U.S. non-institutionalized, civilian population ages eighteen and over begun in 1957. The U.S. National Center for Health Statistics (NCHS) randomly selects one adult from each household to answer supplementary questions beginning 1997. The NHIS core files contain around 100,000 respondents per year. Our analyses are based on data from the adult sample files. The adult sample files contain around 30,000 respondents per year. Couple-level data were created using information on the NHIS household roster, which makes it possible to link the records of an NCHS-designated household reference person to the records of his/her spouse and/or unmarried partner. Regrettably, this eliminates a relatively small number of married and cohabiting couples who live in multiple-family households. The analyses are weighted to account for the inverse probability of selection into the sample and post-stratification based on age, race-ethnicity, and gender. Unmarried respondents who explicitly indicated to the interviewer that they were in a same-sex or opposite-sex cohabiting couple were designated as an "unmarried partner." Same-sex couples who indicated that they were "married" were treated as such. Union status is categorized into six categories: same-sex cohabiting, opposite-sex married, opposite-sex cohabiting, divorced or separated, widowed, and never married. We are also able to identify individuals who reported they were in same-sex marriages in the sample. However, because

same-sex marriage is allowed only in a minority of states, and not legally recognized at the federal level, we are unclear as to the social and legal meaning—and therefore health implications—of marriage for these couples in this context. In all of the models, "same-sex cohabiters" are the reference group in order to comparisons of psychological distress across same-sex couples and other union status groups. Descriptive statistics for the analytic sample are displayed in Table 1.

Psychological distress. The outcome in all of the models is psychological distress. This is measured via the Kessler 6 Scale (K6). The K6 measures non-specific psychological distress in the general population. Methodological studies show that the K6 is a valid and reliable indicator of distress in the general population. Respondents were asked to indicate how often they felt "So sad that nothing could cheer you up," "Nervous", "Restless or fidgety", "Hopeless", "That everything was an effort", and/or "Worthless" in the last 30 days. Responses to the individual items were coded to range from 0 (none of the time) to 4 (all of the time). Each of the six items were summed to create a measure of psychological distress ranging from 0 to 24 ($\alpha = 0.87$). Several large-scale studies (Kessler, et al. 2003) conducted in various subpopulations and several nations have consistently shown that K6 scores of 13 and higher are indicative of "serious mental illness" (SMI). Therefore, following the recommendations of Kessler, et al. (2003), the K6 was dichotomized (0-12 vs. 13-24) to indicate the possible presence of serious mental illness.[2]

Independent and control variables. We include three measures of socioeconomic status: education, poverty status, and employment status. Educational attainment used in the analyses is measured by question asking respondents to provide the highest level of formal education completed. Education was recoded into the following categories: Less than high school, high school or its equivalent (i.e., a G.E.D.), some college and/or an Associate's degree, and a Bachelor's degree or higher (reference category). The poverty ratio is a fourteen-level categorical variable, with values ranging from 50% of poverty to 500% of poverty. We collapse the poverty ratio variable into four categories: Less than 100% poverty, 100% to 199% poverty, 200% + poverty. We also include dummy variable indicating missing values for poverty status.

[2] In recognition of the fact that moderate levels of distress are inherently meaningful, we will carefully examine alternative specifications of the K6 before the presentation.

In all of the models, at or above 200%+ is the reference category. Respondents were asked about their employment status in the previous one to two weeks. We trichotomized employment status into the following categories: Employed, unemployed, and not in the labor force. Employed persons are the reference category.

Other demographic covariates include a categorical measure of age (18-34, 35-49, 50-64, 65+), nativity (native-born vs. foreign-born with the native-born as the reference category). Self-reported race-ethnicity is collapsed into the following mutually exclusive categories: non-Hispanic white, non-Hispanic black, and Hispanic (of any race). Other racial and ethnic groups are excluded from the analyses. Finally, we also include a control for Census region of residence (the Western U.S. is the reference category).

Statistical analyses. Because the meanings and processes of same-sex cohabitation and psychological well-being are fundamentally different across gender and race-ethnic groups (IOM 2011), we conduct the analysis separately for white men, black men, Hispanic men, white women, black women, and Hispanic women. Within each gender and racial-ethnic subgroup, we estimate two binary logistic regression models. We first estimate a model only controlling for basic demographic covariates including age, nativity, and region to understand the general association between same-sex cohabitation and psychological distress. In Model 2, we introduce additional controls for socioeconomic status to examine how socioeconomic status contributes to differences in psychological distress between same-sex cohabiters and other union status groups. Prior research indicates that SES is beneficial to psychological well-being (Ross and Mirowsky 2003). A change in the sizes and/or significance levels of the effects of union status between Models 1 and 2 would suggest that SES differences contribute to the association between same-sex cohabitation and psychological distress.

Preliminary Results

We briefly discuss our preliminary results. These analyses are largely exploratory and the models will likely change a bit prior to our presentation. The results for women are displayed in Table 2. Table 3 contains the results from men. Overall, the analyses suggest that same-sex cohabiters experience higher levels of psychological distress than do opposite-sex married individuals.

However, this is not necessarily the case when comrade to other union statuses. Despite having substantially higher odds of psychological distress relative to many of the other relationship status groups, the results for same-sex cohabiters often fail to reach statistical significance. Moreover, the preliminary results suggest that socioeconomic resources do little mediate this association, particularly among non-Hispanic whites and women. Finally, the results suggest that differences in distress among same-sex cohabiters and opposite-sex married persons vary across gender and race-ethnicity.

In the coming weeks, we will refine our modeling strategy. Importantly, we will examine alternative specifications of psychological distress. Though serious mental illness is an important outcome to examine, psychological distress falls on a continuum, especially when viewed from a "minority stress" perspective. Even mild to moderate levels of stress are important. Therefore, we will estimate models with a categorical measure of distress. In an effort to come up with several substantively meaningful and empirically justified categories, we will group the K6 into the following categories: No Distress (K6 = 0), Low Levels of Distress (K6 = 1-6), Moderate Levels of Distress (K6 = 7-12), and High Levels of Distress/Serious Mental Illness (K6 = 13-24). This is simply one example. We will examine other possibilities in the coming weeks.

Conclusion

Despite growing interest in the health of the sexual minority population in the United States, nationally representative data on the gay, lesbian, bisexual, and/or transgender population (GLBT) is scarce. Researchers interested in sexual minority health in the United States traditionally have had to rely on data drawn from qualitative interviews or relatively small non-probability samples (IOM 2011; Patterson 2000). The implications of same-sex relationships for population well-being is a continued concern, underscored by the recent call for research on gay and lesbian health administered by the Institute of Medicine (IOM 2011). Yet, we know very little about the health of this population. Though imperfect, our analyses will help researchers better understand the psychosocial health concerns of sexual minorities in the United States.

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Table 1: Descriptive Statistics for the Analytic Sample By Race and Gender, NHIS Sample Adult Files, 1997-2009 (N = 348,717)*

	Non-Hispanic White (n = 237,021)				Non-Hispanic Black (n = 51,598)				Hispanic (Any Race, n = 60,098)			
	Women		Men		Women		Men		Women		Men	
	N	%	N	%	N	%	N	%	N	%	N	%
Psychological Distress (K6)												
Very Low (K6 = 0)	55,136	43.5	56,281	52.4	11,381	48.6	15,240	58.9	15,774	48.6	16,038	60.7
Low (K6 = 1-6)	40,714	44.0	57,611	38.5	6,064	36.7	11,787	31.0	7,938	36.5	12,361	30.7
Moderate (K6 = 7-12)	7,449	9.1	12,444	6.8	1,580	10.6	3,558	7.5	1,799	10.2	3,717	6.5
High (K6 = 13-24)	2,651	3.4	4,810	2.3	565	4.2	1,458	2.7	691	4.7	1,856	2.2
Union Status												
Married												
Opposite-Sex	56,750	58.0	61,879	61.7	6,738	29.3	6,618	42.4	13,194	52.9	15,201	55.4
Same-Sex	90	0.1	56	0.1	14	0.1	15	0.1	16	0.1	13	0.1
Cohabiting												
Opposite-Sex	4,484	5.0	5,143	5.2	1,223	4.8	1,093	8.0	1,607	6.0	1,751	6.9
Same-Sex	437	0.4	425	0.5	46	0.3	66	0.3	73	0.2	59	0.4
Not Co-Residential												
Divorced	15,378	11.5	21,995	9.2	4,150	19.3	7,839	13.3	3,193	13.9	6,716	8.0
Widowed	5,224	10.9	22,011	2.8	1,043	10.1	4,430	3.0	632	6.2	2,801	1.4
Never Married	23,587	14.2	19,637	20.5	6,376	36.1	11,982	32.9	7,487	20.8	7,431	27.9
Education												
No high school diploma	13,085	11.9	16,976	12.2	4,603	21.7	7,667	21.7	11,532	40.7	15,011	41.6
High school graduate	30,704	30.8	40,156	29.5	6,210	29.9	9,428	33.1	6,571	25.2	8,235	26.2
Some college	30,815	31.3	40,404	29.0	5,765	32.4	10,015	30.1	5,474	23.2	7,420	21.4
College graduate	31,346	26.0	33,610	29.3	3,012	16.0	4,933	15.1	2,625	10.8	3,306	10.8
Income to Poverty												
Poor (0.00-0.99)	7,099	7.3	11,955	5.6	3,025	20.7	7,837	13.4	4,592	19.6	8,491	15.1
Near Poor (1.00-1.99)	12,368	12.9	19,401	10.8	3,487	18.9	6,349	17.1	6,355	22.7	7,895	23.2
Not Poor (2.00+)	67,644	60.1	72,913	66.0	9,465	39.0	11,158	50.6	10,401	36.6	10,524	43.5
Missing	18,839	19.8	26,877	17.6	3,613	21.5	6,699	19.0	4,854	21.1	7,062	18.2
Employment Status												
Employed	74,071	58.3	73,675	72.2	12,532	59.8	18,556	66.8	20,075	53.4	17,826	78.7
Unemployed	2,693	2.1	2,586	2.8	1,128	5.3	1,676	6.7	1,176	4.3	1,386	4.6
Out of Labor Force	29,186	39.6	54,885	25.0	5,930	34.9	11,811	26.5	4,951	42.4	14,760	16.7
Foreign Born	5,960	4.4	4,644	4.3	2,407	8.5	1839.0	10.0	19,658	58.6	15,673	60.2
Age (Mean)	47.8	-	46.0	-	43.0	-	41.6	-	40.2	-	38.4	-

*The frequencies are not weighted and the percentages (means) are weighted.

Table 2: Logistic Regression Model Predicting Serious Mental Illness Among Women by Race-Ethnicity, NHIS Sample Adult Files, 1997-2009 (N = 197,068)[†]

	Non-Hispanic White		Non-Hispanic Black		Hispanic (Any Race)	
	Model 1a	Model 2a	Model 1b	Model 2b	Model 1c	Model 2c
Union Status						
Opposite-Sex Married	0.737***	0.534***	0.358***	0.390***	0.225***	0.172***
Opposite-Sex Cohabiting	1.792***	1.061**	0.629	0.570	0.467	0.343
Divorced	2.161***	1.291***	0.654	0.595	0.513*	0.362
Widowed	1.773***	0.856	0.672	0.488	0.362+	0.229***
Never Married	1.103***	0.716***	0.632	0.496	0.375*	0.258**
Educational Attainment						
Less Than High School		4.497***		4.495***		2.142***
High School		2.604***		3.145***		1.676+
Some College		2.155		2.853*		1.542
Poverty Status						
Poor		2.519***		1.786***		2.096***
Near Poor		1.889***		1.616***		1.487+
Missing		1.073***		1.156**		1.144***
Employment Status						
Unemployed		3.391***		2.468***		2.311***
Not in Labor Force		2.917***		2.985***		2.000***
Age Group						
35 to 49	1.446***	1.811***	1.302***	1.467***	1.681	1.923***
50 to 64	1.411***	1.433***	1.439***	1.215***	2.078***	2.173***
65 and Above	0.713***	0.406***	0.700***	0.369***	1.847*	1.397
Foreign Born	1.015	1.005	0.541***	0.638**	0.834***	0.660***
Region of Residence						
Northeast	0.826***	0.824***	0.885*	0.823*	1.451***	1.514***
Midwest	0.950	0.89	1.223***	1.162***	0.871**	0.944*
South	1.228***	1.018***	0.954	0.872*	1.074	1.114
BIC	37,674	34,487	11,108	10,413	12,704	12,278
Log Likelihood	37,521	34,239	10,973	10,195	12,568	12,059
N	131,108	131,108	32,021	32,021	33,939	33,939

+p ≤ 0.10, * p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.001 (two-tailed tests)

[†]The analyses are weighted. Odds ratios are presented in the table. The dependent variable is a dichotomous indicator of "serious mental illness" (SMI, Kessler 6 Score of 13+). The reference group includes respondents who are non-Hispanic white, college educated, not poor (income to poverty ≥ 2.00), currently employed, ages 18 to 34, U.S.-born, and residents of the Western United States.

Table 3: Logistic Regression Model Predicting Serious Mental Illness Among Men by Race-Ethnicity, NHIS Sample Adult Files, 1997-2009 (N = 151,649)[†]

	Non-Hispanic White		Non-Hispanic Black		Hispanic (Any Race)	
	Model 1a	Model 2a	Model 1b	Model 2b	Model 1c	Model 2c
Union Status						
Opposite-Sex Married	0.544***	0.539***	0.200***	0.213***	0.420***	0.342**
Opposite-Sex Cohabiting	1.061	0.710	0.334	0.273	0.586	0.415
Divorced	1.527***	1.005***	0.406	0.326	0.862	0.580
Widowed	1.220+	0.765	0.247	0.170*	0.837	0.487
Never Married	1.050	0.551***	0.414	0.245+	0.758	0.408
Education						
Less than high school		2.932***		2.039***		1.274
High school		2.036***		1.323		1.127
Some college		1.485***		1.151		1.072
Poverty						
Poor		2.447***		2.041***		1.983***
Near Poor		2.054***		1.417		1.554+
Missing		1.062***		1.389		1.123*
Employment						
Unemployed		3.746***		1.984		3.554*
Not in labor force		5.262***		3.918***		6.185**
Age						
35 to 49	1.408*	1.509***	1.469	1.449***	1.960	1.985***
50 to 64	1.691***	1.154***	1.666*	1.058*	2.880**	1.849***
65 and above	1.098*	0.314***	1.158	0.379***	2.405+	0.657***
Foreign Born	0.824+	0.873	0.432**	0.546**	0.763**	0.778**
Region						
Northeast	0.882**	0.882*	0.756	0.639+	1.117	1.039
Midwest	0.979	0.937	0.824	0.725	0.911	1.004
South	1.321***	1.135***	0.917	0.767	0.884	0.914
BIC	23,026	20,646	4,834	4,566	5,485	5,130
Log Likelihood	22,875	20,403	4,706	4,358	5,353	4,917
N	105,913	105,913	19,577	19,577	26,159	26,159

+p ≤ 0.10, *p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.001 (two-tailed)

[†]The analyses are weighted. Odds ratios are presented in the table. The dependent variable is a dichotomous indicator of "serious mental illness" (SMI, Kessler 6 Score of 13+). The reference group includes respondents who are non-Hispanic white, college educated, not poor (income to poverty ≥ 2.00), currently employed, ages 18 to 34, U.S.-born, and residents in the Western United States.