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Annotated Bibliography of Notable LGBT Health Disparity Studies

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Access to Health Services

Bauer, G. R., R. Hammond, et al. (2009). "'I don't think this is theoretical; this is our lives': how erasure impacts health care for transgender people." J Assoc Nurses AIDS Care **20**(5): 348-61.

For people who are transgender, transsexual, or transitioned (trans), access to primary, emergency, and transition-related health care is often problematic. Results from Phase I of the Trans PULSE Project, a community-based research project in Ontario, Canada, are presented. Based on qualitative data from focus groups with 85 trans community members, a theoretical framework describing how erasure functions to impact experiences interacting with the health care system was developed. Two key sites of erasure were identified: informational erasure and institutional erasure. How these processes work in a mutually reinforcing manner to erase trans individuals and communities and produce a system in which a trans patient or client is seen as an anomaly is shown. Thus, the impetus often falls on trans individuals to attempt to remedy systematic deficiencies. The concept of cisnormativity is introduced to aid in explaining the pervasiveness of trans erasure. Strategies for change are identified.

Coker, T. R., S. B. Austin, et al. (2010). "The health and health care of lesbian, gay, and bisexual adolescents." Annu Rev Public Health **31**: 457-77.

Adolescents face a variety of challenges in their transition to adulthood; lesbian, gay, and bisexual adolescents face these typical challenges as well as additional challenges that are related to the social stigma of their sexual orientation. For some lesbian, gay, and bisexual adolescents, this stigma may induce psychosocial stress, leading to increased health risk behaviors and poorer health outcomes. In this article, we review data on the health and health care of LGB adolescents. We examine health indicators and health risks for LGB youth, including substance use, eating disorders, suicidality, risky sexual behaviors, violence exposure and victimization, and homelessness. We also examine health care provision and utilization for LGB youth. Lastly, we discuss ways in which researchers and clinicians can improve LGB adolescent health and health care.

Heck, J. E., R. L. Sell, et al. (2006). "Health care access among individuals involved in same-sex relationships." American Journal of Public Health **96**(6): 1111-8.

OBJECTIVES: We used data from the National Health Interview Survey to compare health care access among individuals involved in same-sex versus opposite-sex relationships. METHODS: We conducted descriptive and logistic regression analyses from pooled data on 614 individuals in same-sex relationships and 93418 individuals in opposite-sex relationships. RESULTS: Women in same-sex

relationships (adjusted odds ratio [OR]=0.60; 95% confidence interval [CI]=0.39, 0.92) were significantly less likely than women in opposite-sex relationships to have health insurance coverage, to have seen a medical provider in the previous 12 months (OR=0.66; 95% CI=0.46, 0.95), and to have a usual source of health care (OR=0.50; 95% CI=0.35, 0.71); they were more likely to have unmet medical needs as a result of cost issues (OR=1.85; 95% CI=1.16, 2.96). In contrast, health care access among men in same-sex relationships was equivalent to or greater than that among men in opposite-sex relationships. **CONCLUSIONS:** In this study involving a nationwide probability sample, we found some important differences in access to health care between individuals in same-sex and opposite-sex relationships, particularly women.

Cancer

Boehmer, U. and P. Case (2004). "Physicians don't ask, some patients tell: Disclosure of sexual orientation among women with breast carcinoma." *American Cancer Society* **101**(8): 1882-1889.

Bowen, D. J., U. Boehmer, et al. (2007). Cancer and sexual minority women. *The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual and Transgender Populations*. I. H. Meyer and M. E. Northridge. New York, Springer: 523-538.

Cochran, S. D., V. M. Mays, et al. (2001). "Cancer-related risk indicators and preventive screening behaviors among lesbians and bisexual women." *American Journal of Public Health* **91**(4): 591-7.

OBJECTIVES: This study examined whether lesbians are at increased risk for certain cancers as a result of an accumulation of behavioral risk factors and difficulties in accessing health care. **METHODS:** Prevalence estimates of behavioral risk factors (nulliparity, obesity, smoking, and alcohol use), cancer screening behaviors, and self-reported breast cancer histories derived from 7 independently conducted surveys of lesbians/bisexual women (n = 11,876) were compared with national estimates for women. **RESULTS:** In comparison with adjusted estimates for the US female population, lesbians/bisexual women exhibited greater prevalence rates of obesity, alcohol use, and tobacco use and lower rates of parity and birth control pill use. These women were also less likely to have health insurance coverage or to have had a recent pelvic examination or mammogram. Self-reported histories of breast cancer, however, did not differ from adjusted US female population estimates. **CONCLUSIONS:** Lesbians and bisexual women differ from heterosexual women in patterns of health risk. These women would be expected to be at especially greater risk for chronic diseases linked to smoking and obesity.

General

(2001). "Healthy People 2010 LGBT Companion Document." San Francisco, CA, Gay and Lesbian Medical Association: 481. <
[http://glma.org/ data/n_0001/resources/live/HealthyCompanionDoc3.pdf](http://glma.org/data/n_0001/resources/live/HealthyCompanionDoc3.pdf)> Accessed on July 12, 2010.

Aaron, D. J., N. Markovic, et al. (2001). "Behavioral risk factors for disease and preventive health practices among lesbians." American Journal of Public Health **91**(6): 972-5.
OBJECTIVES: This study compared the prevalence of health behaviors among lesbians and in the general population of women. METHODS: We used a cross-sectional community-based survey of 1010 self-identified lesbians 18 years or older. RESULTS: Compared with the general population of women, lesbians were more likely to report cigarette use, alcohol use, and heavy alcohol use. A higher percentage of lesbians were categorized as overweight, and lesbians were more likely to participate in vigorous physical activity. They were less likely to report having had a Papanicolaou test within the past 2 years but more likely to report ever having had a mammogram. CONCLUSIONS: While there may be differences in health behaviors between lesbians and the general population of women, how these differences influence the risk of subsequent disease is unknown.

Boehmer, U. (2002). "Twenty years of public health research: inclusion of lesbian, gay, bisexual, and transgender populations." American Journal of Public Health **92**(7): 1125-30.
OBJECTIVES: This study determined to what extent lesbian, gay, bisexual, and transgender (LGBT) populations have been studied over the past 20 years of public health research. METHODS: From MEDLINE English-language articles on human subjects published between 1980 and 1999, I identified articles that included LGBT individuals. The abstracts were analyzed with a coding procedure that categorized the content by topic, sexual orientation, and race/ethnicity. RESULTS: LGBT issues were addressed by 3777 articles, or 0.1% of all Medline articles; 61% of the articles were disease-specific, and 85% omitted reference to race/ethnicity. Research unrelated to sexually transmitted diseases addressed lesbians and gay men with similar frequency, whereas bisexual persons were less frequently considered, and the least amount of research focused on transgender individuals. CONCLUSIONS: Findings supported that LGBT issues have been neglected by public health research and that research unrelated to sexually transmitted diseases is lacking.

Bowen, D. J., J. Bradford, et al. (2006). "Comparing sexual minority status across sampling methods and populations." Women and Health **44**(2): 121-34.

The health of sexual minority women (SMW) has recently received research attention. Previous research into the health of SMW (e.g., lesbians, bisexuals, transgendered women) used a mixture of sampling methods, many of which were poorly documented and difficult to understand. The results of these previous studies do not present a consistent pattern of findings, possibly due to differences in sampling methods. The present study compared the characteristics of SMW across four survey sampling methods, three in the same geographic area. Differences were found among groups of SMW by sampling method, including in demographic data (e.g., level of education) and personal health data (e.g., rates of regular mammography screening). These findings provided a possible explanation for the variety of findings in the published literature and identified rigorous sampling methods that can be used in future research.

Cochran, S. D. and V. M. Mays (2007). "Physical health complaints among lesbians, gay men, and bisexual and homosexually experienced heterosexual individuals: results from the California Quality of Life Survey." American Journal of Public Health **97**(11): 2048-55.

OBJECTIVES: We examined evidence that minority sexual orientation is associated with more-frequent reports of physical health complaints. We also investigated the possible role of HIV infection among gay men and higher rates of psychological distress among lesbians, gay men, and bisexually and homosexually experienced heterosexual individuals in generating these health disparities. **METHODS:** We used data from the California Quality of Life Survey (N=2272 adults) to examine associations between sexual orientation and self-reports about physical health status, common health conditions, disabilities, and psychological distress.

RESULTS: Prevalent HIV infection was reported by nearly 18% of gay, bisexual, and homosexually experienced heterosexual men. Gay men and bisexual and homosexually experienced heterosexual individuals had higher levels of psychological distress compared with exclusively heterosexual individuals. Self-reported physical health status varied by gender and by sexual orientation.

CONCLUSIONS: Lesbians and bisexual and homosexually experienced heterosexual women reported a greater variety of health conditions and limitations compared with exclusively heterosexual women; however, these differences mostly disappeared when distress levels were taken into account. Among men, differences in health complaints appeared to reflect the ongoing burden of HIV and other sexually transmitted diseases in the gay male community.

Conron, K. J., M. J. Mimiaga, et al. (2010). "A Population-Based Study of Sexual Orientation Identity and Gender Differences in Adult Health." Am J Public Health.

Objectives. We provide estimates of several leading US adult health indicators by sexual orientation identity and gender to fill gaps in the current literature. **Methods.** We aggregated data from the 2001-2008 Massachusetts Behavioral Risk Factor Surveillance surveys (N=67359) to examine patterns in self-reported identity and

gender, using multivariable logistic regression. Results. Compared with heterosexuals, sexual minorities (i.e., gays/lesbians, 2% of sample; bisexuals, 1%) were more likely to report activity limitation, tension or worry, smoking, drug use, asthma, lifetime sexual victimization, and HIV testing, but did not differ on 3-year Papanicolaou tests, lifetime mammography, diabetes, or heart disease. Compared with heterosexuals, bisexuals reported more barriers to health care, current sadness, past-year suicidal ideation, and cardiovascular disease risk. Gay men were less likely to be overweight or obese and to obtain prostate-specific antigen tests, and lesbians were more likely to be obese and to report multiple risks for cardiovascular disease. Binge drinking and lifetime physical intimate partner victimization were more common among bisexual women. Conclusions. Sexual orientation disparities in chronic disease risk, victimization, health care access, mental health, and smoking merit increased attention. More research on heterogeneity in health and health determinants among sexual minorities is needed.

Dean, L., I. Meyer, et al. (2000). "Lesbian, Gay, Bisexual and Transgender Health: Findings and Concerns." Journal of the Gay and Lesbian Medical Association 4(3): 101-151.

Diamant, A. L., C. Wold, et al. (2000). "Health behaviors, health status, and access to and use of health care: a population-based study of lesbian, bisexual, and heterosexual women." Archives of Family Medicine 9(10): 1043-51.

BACKGROUND: There is a dearth of validated information about lesbian and bisexual women's health. To better understand some of these issues, we used population-based data to assess variations in health behaviors, health status, and access to and use of health care based on sexual orientation. **METHODS:** Our study population was drawn from a population-based sample of women, the 1997 Los Angeles County Health Survey. Participants reported their sexual orientation and these analyses included 4697 women: 4610 heterosexual women, 51 lesbians, and 36 bisexual women. We calculated adjusted relative risks to assess the effect of sexual orientation on important health issues. **RESULTS:** Lesbians and bisexual women were more likely than heterosexual women to use tobacco products and to report any alcohol consumption, but only lesbians were significantly more likely than heterosexual women to drink heavily. Lesbians and bisexual women were less likely than heterosexual women to have health insurance, more likely to have been uninsured for health care during the preceding year, and more likely to have had difficulty obtaining needed medical care. During the preceding 2 years, lesbians, but not bisexual women, were less likely than heterosexual women to have had a Papanicolaou test and a clinical breast examination. **CONCLUSIONS:** In this first population-based study of lesbian and bisexual women's health, we found that lesbians and bisexual women were more likely than heterosexual women to have poor health behaviors and worse access to health care. These findings support our hypothesis that sexual orientation has an independent effect on health behaviors

and receipt of care, and indicate the need for the increased systematic study of the relationship between sexual orientation and various aspects of health and health care. *Arch Fam Med.* 2000; 9:1043-1051

Diaz, R. M., G. Ayala, et al. (2004). "Sexual risk as an outcome of social oppression: data from a probability sample of Latino gay men in three U.S. cities." *Cultur Divers Ethnic Minor Psychol* **10**(3): 255-67.

Based on data from a probability sample of 912 Latino gay men in 3 U.S. cities, a multivariate model of sexual risk was tested, including experiences of homophobia, racism, and poverty as predictors. Participants reported multiple instances of verbal and physical abuse, rude mistreatment, and discrimination on account of their sexual orientation and their race or ethnicity. Many reported experiences of poverty, such as inability to pay for basic necessities of food or shelter. Men who reported more instances of social discrimination and financial hardship were more psychologically distressed and more likely to participate in "difficult" sexual situations, as predicted. Participation in difficult sexual situations mediates the effects of social oppression and psychological distress on sexual risk behavior.

Harcourt, J. (2006). "Current issues in lesbian, gay, bisexual, and transgender (LGBT) health: introduction." *Journal of Homosexuality* 51(1): 1-11.

Hatzenbuehler, M. L., K. M. Keyes, et al. (2009). "State-level policies and psychiatric morbidity in lesbian, gay, and bisexual populations." *Am J Public Health* **99**(12): 2275-81.

OBJECTIVES: We investigated the modifying effect of state-level policies on the association between lesbian, gay, or bisexual status and the prevalence of psychiatric disorders. **METHODS:** Data were from wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), a nationally representative study of noninstitutionalized US adults (N=34,653). States were coded for policies extending protections against hate crimes and employment discrimination based on sexual orientation. **RESULTS:** Compared with living in states with policies extending protections, living in states without these policies predicted a significantly stronger association between lesbian, gay, or bisexual status and psychiatric disorders in the past 12 months, including generalized anxiety disorder (F=3.87; df=2; P=.02), post-traumatic stress disorder (F=3.42; df=2; P=.04), and dysthymia (F=5.20; df=2; P=.02). Living in states with policies that did not extend protections also predicted a stronger relation between lesbian, gay, or bisexual status and psychiatric comorbidity (F=2.47; df=2; P=.04). **CONCLUSIONS:** State-level protective policies modify the effect of lesbian, gay, or bisexual status on psychiatric disorders. Policies that reduce discrimination against gays and lesbians are urgently needed to protect the health and well-being of this population.

Herek, Gregory M., Norton, Aaron T., Allen, Thomas J. and Charles Sims (2010). "Demographic, Psychological and Social Characteristics of Self-Identified Lesbian, Gay, and Bisexual Adults in a U.S. Probability Sample." Sex Res. Soc. Policy. DOI 10. 1007/s 13178-010-0017-y.

Using data from a US national probability sample of self-identified lesbian, gay, and bisexual adults ($N = 662$), this article reports population parameter estimates for a variety of demographic, psychological, and social variables. Special emphasis is given to information with relevance to public policy and law. Compared with the US adult population, respondents were younger, more highly educated, and less likely to be non-Hispanic White, but differences were observed between gender and sexual orientation groups on all of these variables. Overall, respondents tended to be politically liberal, not highly religious, and supportive of marriage equality for same-sex couples. Women were more likely than men to be in a committed relationship. Virtually all coupled gay men and lesbians had a same-sex partner, whereas the vast majority of coupled bisexuals were in a heterosexual relationship. Compared with bisexuals, gay men and lesbians reported stronger commitment to a sexual-minority identity, greater community identification and involvement, and more extensive disclosure of their sexual orientation to others. Most respondents reported experiencing little or no choice about their sexual orientation. The importance of distinguishing among lesbians, gay men, bisexual women, and bisexual men in behavioral and social research is discussed.

Dilley, J. A., K. W. Simmons, et al. (2009). "Demonstrating the importance and feasibility of including sexual orientation in public health surveys: health disparities in the Pacific Northwest." *Am J Public Health* **100**(3): 460-7.

OBJECTIVES: We identified health disparities for a statewide population of lesbian, gay, and bisexual (LGB) men and women compared with their heterosexual counterparts. **METHODS:** We used data from the 2003-2006 Washington State Behavioral Risk Factor Surveillance System to examine associations between sexual orientation and chronic health conditions, health risk behaviors, access to care, and preventive services. **RESULTS:** Lesbian and bisexual women were more likely than were heterosexual women to have poor physical and mental health, asthma, and diabetes (bisexuals only), to be overweight, to smoke, and to drink excess alcohol. They were also less likely to have access to care and to use preventive services. Gay and bisexual men were more likely than were heterosexual men to have poor mental health, poor health-limited activities, and to smoke. Bisexuals of both genders had the greatest number and magnitude of disparities compared with heterosexuals. **CONCLUSIONS:** Important health disparities exist for LGB adults. Sexual orientation can be effectively included as a standard demographic variable in public health surveillance systems to provide data that support planning interventions and progress toward improving LGB health.

Mayer, K. H., J. Bradford, et al. (2008). "Sexual and gender minority health: what we know and what needs to be done." American Journal of Public Health **98**(6): 989-995.

Meyer, I. H., S. Schwartz, et al. (2008). "Social patterning of stress and coping: does disadvantaged social statuses confer more stress and fewer coping resources?" Soc Sci Med **67**(3): 368-79.

Despite its centrality to social stress theory, research on the social patterning of stress exposure and coping resources has been sparse and existing research shows conflicting results. We interviewed 396 gay, lesbian and bisexual, and 128 heterosexual people in New York City to examine variability in exposure to stress related to sexual orientation, gender, and race/ethnicity. Multiple linear regressions showed clear support for the social stress hypothesis with regard to race/ethnic minority status, somewhat mixed support with regard to sexual orientation, and no support with regard to gender. We discuss this lack of parsimony in social stress explanations for health disparities.

Mays, V. M., A. K. Yancey, et al. (2002). "Heterogeneity of health disparities among African American, Hispanic, and Asian American women: unrecognized influences of sexual orientation." American Journal of Public Health **92**(4): 632-9.

OBJECTIVES: This study compared health indicators among self-identified lesbians/bisexual women and heterosexual women residing in Los Angeles County. **METHODS:** Respondents were English-speaking Hispanic, African American, and Asian American women. Health status, behavioral risks, access barriers, and indicators of health care were assessed. **RESULTS:** Prevalence rates of chronic health conditions were similar among women in the 3 racial/ethnic groups. However, lesbians and bisexual women evidenced higher behavioral risks and lower rates of preventive care than heterosexual women. **CONCLUSIONS:** Among racial/ethnic minority women, minority sexual orientation is associated with increased health risks. The effects of sexual minority status need to be considered in addressing health disparities affecting this population.

McGuire, J. K., C. R. Anderson, et al. (2010). "School Climate for Transgender Youth: A Mixed Method Investigation of Student Experiences and School Responses." J Youth Adolesc.

Transgender youth experience negative school environments and may not benefit directly from interventions defined to support Lesbian, Gay and Bisexual (LGB) youth. This study utilized a multi-method approach to consider the issues that transgender students encounter in school environments. Using data from two studies, survey data (total n = 2260, 68 transgender youth) from study 1 and focus groups (n = 35) from study 2, we examine transgender youth's experience of school harassment, school strategies implemented to reduce harassment, the protective role of supportive school personnel, and individual responses to harassment,

including dropping out and changing schools. In both studies, we found that school harassment due to transgender identity was pervasive, and this harassment was negatively associated with feelings of safety. When schools took action to reduce harassment, students reported greater connections to school personnel. Those connections were associated with greater feelings of safety. The indirect effects of school strategies to reduce harassment on feelings of safety through connection to adults were also significant. Focus group data illuminate specific processes schools can engage in to benefit youth, and how the youth experience those interventions.

Ramirez-Valles, J. (2007). "I don't fit anywhere': How race and sexuality shape latino gay and bisexual men's health." The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual and Transgender Populations. I. H. Meyer and M. E. Northridge. New York, Springer: 301-319.

Ramirez-Valles, J., L. M. Kuhns, et al. (2010). "Social integration and health: community involvement, stigmatized identities, and sexual risk in Latino sexual minorities." J Health Soc Behav **51**(1): 30-47.

The purpose of this study is to contribute to the conceptual understanding and practical application of social integration theory to health behaviors. We test whether community involvement in AIDS and GLBT organizations moderates the relationship of racial and homosexual stigmata to sexual risk behavior among gay and bisexual men and transgender persons of Latin American origin or descent. We use structural equation modeling to analyze data from a sample of 643 individuals recruited via respondent-driven sampling. Among those not involved in community organizations, homosexual and racial stigmata are related to sexual activity under the influence of alcohol and drugs, which is linked to sexual risk behavior. Among the involved group, the stigmata are not linked to sexual activity under the influence of alcohol and drugs, or to sexual risk behavior. The moderating role of community involvement seems to be more salient in those currently involved than those ever involved.

Scheer, S., I. Peterson, et al. (2002). "Sexual and drug use behavior among women who have sex with both women and men: results of a population-based survey." American Journal of Public Health **92**(7): 1110-2.

Stall, R., Friedman, M., Catania, J.A. (2008). Interacting Epidemics and Gay Men's Health: A Theory of Syndemic Production among Urban Gay Men Unequal Opportunity: Health Disparities Affecting Gay and Bisexual Men in the United States. R. Wolitski, Stall, R., Valdiserri, R. Oxford University Press 251-74.

Welles, S. L. (2007). "Why LGBT Health Research, Why Now." *J LGBT Health Res*, 3(1), 1-5.

The article offers information on several studies concerning the lesbian, gay, bisexual and transgender (LGBT) community. They include the Multicenter AIDS Cohort Study which is based on human immunodeficiency virus (HIV) or sexually transmitted disease (STD) risk and a study on substance abuse among gay men.

Wolitski, R. J., R. Stall, et al., Eds. (2008). Unequal Opportunity: Health Disparities Affecting Gay and Bisexual Men in the United States. Oxford, Oxford University Press.

Xavier, J., J. A. Honnold, et al. (2007). "The health, health-related needs, and lifecourse experiences of transgender Virginians." Richmond, Virginia Department of Public Health.

Health Risk Behaviors

Austin, S. B., A. L. Roberts, et al. (2008). "Sexual violence victimization history and sexual risk indicators in a community-based urban cohort of "mostly heterosexual" and heterosexual young women." *Am J Public Health* **98**(6): 1015-20.

OBJECTIVES: We sought to examine sexual violence victimization in childhood and sexual risk indicators in young adulthood in a primarily Latina and Black cohort of "mostly heterosexual" and heterosexual women in the Project on Human Development in Chicago Neighborhoods (PHDCN). **METHODS:** In 2000, a comprehensive survey that assessed sexual orientation, sexual risk indicators, and sexual abuse victimization was completed by 391 young women (aged 18 to 24 years) who had participated in PHDCN. We used multivariable regression methods to examine sexual orientation group differences in sexual risk indicators and to assess whether childhood sexual abuse may mediate relationships. **RESULTS:** Compared with self-reported heterosexual women, self-reported "mostly heterosexual" women were more likely to report having been the victim of childhood sexual abuse, to have had a sexually transmitted infection, to report an earlier age of first sexual intercourse, and to have had more sexual partners. Childhood sexual abuse did not mediate relationships between sexual orientation and sexual risk indicators. **CONCLUSIONS:** Our findings add to the evidence that "mostly heterosexual" women experience greater health risk than do heterosexual women. In addition, "mostly heterosexual" women are at high risk for having experienced childhood sexual abuse.

HIV

Catania, J. A., D. Osmond, et al. (2001). "The continuing HIV epidemic among men who have sex with men." American Journal of Public Health **91**(6): 907-14.

OBJECTIVES: This study characterized the AIDS epidemic among urban men who have sex with men (MSM). **METHODS:** A probability sample of MSM was obtained in 1997 (n = 2881; 18 years and older) from New York, Los Angeles, Chicago, and San Francisco, and HIV status was determined through self-report and biological measures. **RESULTS:** HIV prevalence was 17% (95% confidence interval = 15%, 19%) overall, with extremely high levels in African Americans (29%), MSM who used injection drugs (40%), "ultraheavy" noninjection drug users (32%), and less educated men (< high school, 37%). City-level HIV differences were non-significant once these other factors were controlled for. In comparing the present findings with historical data based on public records and modeling, HIV prevalence appears to have declined as a result of high mortality (69%) and stable, but high, incidence rates (1%-2%). **CONCLUSIONS:** Although the findings suggest that HIV prevalence has declined significantly from the mid-1980s, current levels among urban MSM in the United States approximate those of sub-Saharan countries (e.g., 14%-25%) and are extremely high in many population subsegments. Despite years of progress, the AIDS epidemic continues unabated among subsegments of the MSM community.

Mental Health and Mental Disorders

Bostwick, W. B., C. J. Boyd, et al. (2009). "Dimensions of sexual orientation and the prevalence of mood and anxiety disorders in the United States." Am J Public Health **100**(3): 468-75.

OBJECTIVES: We used data from a nationally representative sample to examine the associations among 3 dimensions of sexual orientation (identity, attraction, and behavior), lifetime and past-year mood and anxiety disorders, and sex. **METHODS:** We analyzed data from wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions. **RESULTS:** Mental health outcomes differed by sex, dimension of sexual orientation, and sexual minority group. Whereas a lesbian, gay, or bisexual identity was associated with higher odds of any mood or anxiety disorder for both men and women, women reporting only same-sex sexual partners in their lifetime had the lowest rates of most disorders. Higher odds of any lifetime mood or anxiety disorder were more consistent and pronounced among sexual minority men than among sexual minority women. Finally, bisexual behavior conferred the highest odds of any mood or anxiety disorder for both males and females. **CONCLUSIONS:** Findings point to mental health disparities among some, but not all, sexual minority groups and emphasize the importance of including multiple measures of sexual orientation in population-based health studies.

Cochran, S. D. and V. M. Mays (2000). "Relation between psychiatric syndromes and behaviorally defined sexual orientation in a sample of the US population." American Journal of Epidemiology **151**(5): 516-23.

Most surveys of the prevalence of psychiatric disorders among lesbians and gay men find no increased risk in comparison with heterosexuals. However, the majority of this work has relied on convenience samples drawn from the visible lesbian and gay community. The authors examined differences in 1-year prevalence of six psychiatric syndromes among sexually active individuals in the 1996 National Household Survey of Drug Abuse who reported either exclusive heterosexuality (n = 9,714) or having any same-gender sex partners (n = 194) in the prior year. Although nearly three quarters of homosexually active individuals did not meet criteria for any of the six syndromes assessed, in multivariate logistic regression analyses, homosexually active men were more likely than other men to evidence major depression and panic attack syndromes. In contrast, homosexually active women were more likely than other women to be classified with alcohol or drug dependency syndromes. Both men and women reporting any same-gender sex partners were more likely than others to have used mental health services in the year prior to interview. These findings suggest a small increased risk among homosexually active populations in 1-year psychiatric morbidity and use of mental health care services.

Cochran, S. D. and V. M. Mays (2009). "Burden of psychiatric morbidity among lesbian, gay, and bisexual individuals in the California Quality of Life Survey." J Abnorm Psychol **118**(3): 647-58.

In recent population-based surveys, minority sexual orientation has been identified as a potential risk indicator for psychiatric morbidity. However, methodological limitations in the studies to date have led to concerns that current estimates are biased due to inadequate measurement of sexual orientation and uncontrolled confounding from prevalent HIV infection. In the present study, the authors investigate associations between sexual orientation and mental health/substance use morbidity using information obtained from 2,272 individuals, including 652 sexual orientation minorities, age 18 to 72 years, interviewed in the California Quality of Life Survey. Results confirm that minority sexual orientation is a risk indicator for psychiatric morbidity. However, levels of increased risk vary within this subpopulation by both gender and patterns of sexual orientation expression. Among gay/bisexual men, much of this greater burden is related to concurrent HIV infection. Reducing excess mental health morbidity risk among sexual orientation minorities could result in possibly a 5% to 11% reduction in the burden of the disorders assessed here among the adult population. Sexual orientation represents an important, but relatively understudied, individual characteristic shaping risk for psychiatric morbidity.

Cochran, S. D., V. M. Mays, et al. (2007). "Mental health and substance use disorders among Latino and Asian American lesbian, gay, and bisexual adults." Journal of Consulting and Clinical Psychology **75**(5): 785-94.

Growing evidence suggests that lesbian, gay, and bisexual adults may be at elevated risk for mental health and substance use disorders, possibly due to anti-gay stigma. Little of this work has examined putative excess morbidity among ethnic/racial minorities resulting from the experience of multiple sources of discrimination. The authors report findings from the National Latino and Asian American Survey (NLAAS), a national household probability psychiatric survey of 4,488 Latino and Asian American adults. Approximately 4.8% of persons interviewed identified as lesbian, gay, bisexual, and/or reported recent same-gender sexual experiences. Although few sexual orientation-related differences were observed, among men, gay/bisexual men were more likely than heterosexual men to report a recent suicide attempt. Among women, lesbian/bisexual women were more likely than heterosexual women to evidence positive 1-year and lifetime histories of depressive disorders. These findings suggest a small elevation in psychiatric morbidity risk among Latino and Asian American individuals with a minority sexual orientation. However, the level of morbidity among sexual orientation minorities in the NLAAS appears similar to or lower than that observed in population-based studies of lesbian, gay, and bisexual adults.

Gilman, S. E., S. D. Cochran, et al. (2001). "Risk of psychiatric disorders among individuals reporting same-sex sexual partners in the National Comorbidity Survey." American Journal of Public Health **91**(6): 933-9.

OBJECTIVES: This study examined the risk of psychiatric disorders among individuals with same-sex sexual partners. **METHODS:** Data are from the National Comorbidity Survey, a nationally representative household survey. Respondents were asked the number of women and men with whom they had sexual intercourse in the past 5 years. Psychiatric disorders according to Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition (DSM-III-R) criteria were assessed with a modified version of the Composite International Diagnostic Interview. **RESULTS:** A total of 2.1% of men and 1.5% of women reported 1 or more same-sex sexual partners in the past 5 years. These respondents had higher 12-month prevalences of anxiety, mood, and substance use disorders and of suicidal thoughts and plans than did respondents with opposite-sex partners only. Decomposition showed that the elevated same-sex 12-month prevalences were largely due to higher lifetime prevalences. Ages at onset and persistence of disorders did not differ between the same-sex and opposite-sex sub samples. **CONCLUSIONS:** Homosexual orientation, defined as having same-sex sexual partners, is associated with a general elevation of risk for anxiety, mood, and substance use disorders and for suicidal thoughts and plans. Further research is needed to replicate and explore the causal mechanisms underlying this association.

Grella, C. E., L. Greenwell, et al. (2009). "Influence of gender, sexual orientation, and need on treatment utilization for substance use and mental disorders: findings from the California Quality of Life Survey." BMC Psychiatry **9**: 52.

BACKGROUND: Prior research has shown a higher prevalence of substance use and mental disorders among sexual minorities, however, the influence of sexual orientation on treatment seeking has not been widely studied. We use a model of help-seeking for vulnerable populations to investigate factors related to treatment for alcohol or drug use disorders and mental health disorders, focusing on the contributions of gender, sexual orientation, and need. **METHODS:** Survey data were obtained from a population-based probability sample of California residents that oversampled for sexual minorities. Logistic regression was used to model the enabling, predisposing, and need-related factors associated with past-year mental health or substance abuse treatment utilization among adults aged 18-64 (N = 2,074). **RESULTS:** Compared with individuals without a diagnosed disorder, those with any disorder were more likely to receive treatment. After controlling for both presence of disorder and other factors, lesbians and bisexual women were most likely to receive treatment and heterosexual men were the least likely. Moreover, a considerable proportion of sexual orientation minorities without any diagnosable disorder, particularly lesbians and bisexual women, also reported receiving treatment. **CONCLUSION:** The study highlights the need to better understand the factors beyond meeting diagnostic criteria that underlie treatment utilization among sexual minorities. Future research should also aim to ascertain the effects of treatment provided to sexual minorities with and without diagnosable disorders, including the possibility that the provision of such treatment may reduce the likelihood of their progression to greater severity of distress, disorders, or impairments in functioning.

Jorm, A. F., A. E. Korten, et al. (2002). "Sexual orientation and mental health: results from a community survey of young and middle-aged adults." British Journal of Psychiatry **180**: 423-7.

BACKGROUND: Community surveys have reported a higher rate of mental health problems in combined groups of homosexual and bisexual participants, but have not separated these two groups. **AIMS:** To assess separately the mental health of homosexual and bisexual groups compared with heterosexuals. **METHOD:** A community survey of 4824 adults was carried out in Canberra, Australia. Measures covered anxiety, depression, suicidality, alcohol misuse, positive and negative affect and a range of risk factors for poorer mental health. **RESULTS:** The bisexual group was highest on measures of anxiety, depression and negative affect, with the homosexual group falling between the other two groups. Both the bisexual and homosexual groups were high on suicidality. Bisexuals also had more current adverse life events, greater childhood adversity, less positive support from family,

more negative support from friends and a higher frequency of financial problems. Homosexuals reported greater childhood adversity and less positive support from family. CONCLUSIONS: The bisexual group had the worst mental health, although homosexual participants also tended to report more distress.

King, M., J. Semlyen, et al. (2008). "A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people." *BMC Psychiatry* **8**: 70.

BACKGROUND: Lesbian, gay and bisexual (LGB) people may be at higher risk of mental disorders than heterosexual people. METHOD: We conducted a systematic review and meta-analysis of the prevalence of mental disorder, substance misuse, suicide, suicidal ideation and deliberate self harm in LGB people. We searched Medline, Embase, PsycInfo, Cinahl, the Cochrane Library Database, the Web of Knowledge, the Applied Social Sciences Index and Abstracts, the International Bibliography of the Social Sciences, Sociological Abstracts, the Campbell Collaboration and grey literature databases for articles published January 1966 to April 2005. We also used Google and Google Scholar and contacted authors where necessary. We searched all terms related to homosexual, lesbian and bisexual people and all terms related to mental disorders, suicide, and deliberate self harm. We included papers on population based studies which contained concurrent heterosexual comparison groups and valid definition of sexual orientation and mental health outcomes. RESULTS: Of 13706 papers identified, 476 were initially selected and 28 (25 studies) met inclusion criteria. Only one study met all our four quality criteria and seven met three of these criteria. Data was extracted on 214,344 heterosexual and 11,971 non heterosexual people. Meta-analyses revealed a two fold excess in suicide attempts in lesbian, gay and bisexual people [pooled risk ratio for lifetime risk 2.47 (CI 1.87, 3.28)]. The risk for depression and anxiety disorders (over a period of 12 months or a lifetime) on meta-analyses were at least 1.5 times higher in lesbian, gay and bisexual people (RR range 1.54-2.58) and alcohol and other substance dependence over 12 months was also 1.5 times higher (RR range 1.51-4.00). Results were similar in both sexes but meta analyses revealed that lesbian and bisexual women were particularly at risk of substance dependence (alcohol 12 months: RR 4.00, CI 2.85, 5.61; drug dependence: RR 3.50, CI 1.87, 6.53; any substance use disorder RR 3.42, CI 1.97-5.92), while lifetime prevalence of suicide attempt was especially high in gay and bisexual men (RR 4.28, CI 2.32, 7.88). CONCLUSION: LGB people are at higher risk of mental disorder, suicidal ideation, substance misuse, and deliberate self harm than heterosexual people.

Mathy, R. M., S. D. Cochran, et al. (2009). "The association between relationship markers of sexual orientation and suicide: Denmark, 1990-2001." *Social Psychiatry and Psychiatric Epidemiology*.

OBJECTIVE: Minority sexual orientation has been repeatedly linked to elevated rates of suicide attempts. Whether this translates into greater risk for suicide

mortality is unclear. We investigated sexual orientation-related differences in suicide mortality in Denmark during the initial 12-year period following legalization of same-sex registered domestic partnerships (RDPs). **METHOD:** Using data from death certificates issued between 1990 and 2001 and population estimates from the Danish census, we estimated suicide mortality risk among individuals classified into one of three marital/cohabitation statuses: current/formerly in same-sex RDPs; current/formerly heterosexually married; or never married/registered. **RESULTS:** Risk for suicide mortality was associated with this proxy indicator of sexual orientation, but only significantly among men. The estimated age-adjusted suicide mortality risk for RDP men was nearly eight times greater than for men with positive histories of heterosexual marriage and nearly twice as high for men who had never married. **CONCLUSIONS:** Suicide risk appears greatly elevated for men in same-sex partnerships in Denmark. To what extent this is true for similar gay and bisexual men who are not in such relationships is unknown, but these findings call for targeted suicide prevention programs aimed at reducing suicide risk among gay and bisexual men.

Matthews, A. K., T. L. Hughes, et al. (2002). "Prediction of depressive distress in a community sample of women: the role of sexual orientation." *American Journal of Public Health* **92**(7): 1131-9.

OBJECTIVES: This study compared factors known or hypothesized to influence depressive symptomatology in a community sample of lesbians and heterosexual women. **METHODS:** Data were collected in a multi-site survey of lesbians' physical and mental health. **RESULTS:** Findings confirmed earlier reports suggesting that traumatic life events such as physical and sexual abuse, and individual traits and coping styles are risk factors for depressive distress. However, findings of higher rates of suicidal behavior and of several risk factors for depressive distress among lesbians suggest that risk for depression may differ among lesbians and heterosexual women. **CONCLUSIONS:** Sexual orientation may represent an important but poorly understood risk factor for depressive distress as well as suicidal ideation and behavior.

Mays, V. M. and S. D. Cochran (2001). "Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States." *American Journal of Public Health* **91**(11): 1869-76.

OBJECTIVES: Recent studies suggest that lesbians and gay men are at higher risk for stress-sensitive psychiatric disorders than are heterosexual persons. We examined the possible role of perceived discrimination in generating that risk. **METHODS:** The National Survey of Midlife Development in the United States, a nationally representative sample of adults aged 25 to 74 years, surveyed individuals self-identifying as homosexual or bisexual (n = 73) or heterosexual (n = 2844) about their lifetime and day-to-day experiences with discrimination. Also assessed were 1-

year prevalence of depressive, anxiety, and substance dependence disorders; current psychologic distress; and self-rated mental health. RESULTS: Homosexual and bisexual individuals more frequently than heterosexual persons reported both lifetime and day-to-day experiences with discrimination. Approximately 42% attributed this to their sexual orientation, in whole or part. Perceived discrimination was positively associated with both harmful effects on quality of life and indicators of psychiatric morbidity in the total sample. Controlling for differences in discrimination experiences attenuated observed associations between psychiatric morbidity and sexual orientation. CONCLUSIONS: Higher levels of discrimination may underlie recent observations of greater psychiatric morbidity risk among lesbian, gay, and bisexual individuals.

Meyer, I. H. (2003). "Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence." Psychological Bulletin **129**(5): 674-97.

In this article the author reviews research evidence on the prevalence of mental disorders in lesbians, gay men, and bisexuals (LGBs) and shows, using meta-analyses, that LGBs have a higher prevalence of mental disorders than heterosexuals. The author offers a conceptual framework for understanding this excess in prevalence of disorder in terms of minority stress--explaining that stigma, prejudice, and discrimination create a hostile and stressful social environment that causes mental health problems. The model describes stress processes, including the experience of prejudice events, expectations of rejection, hiding and concealing, internalized homophobia, and ameliorative coping processes. This conceptual framework is the basis for the review of research evidence, suggestions for future research directions, and exploration of public policy implications.

Mills, T. C., J. Paul, et al. (2004). "Distress and depression in men who have sex with men: the Urban Men's Health Study." American Journal of Psychiatry **161**(2): 278-85.

OBJECTIVE: This study estimates the prevalence of depression and describes the correlates and independent associations of distress and depression among U.S. men who have sex with men. METHOD: A household-based probability sample of men who have sex with men (N=2,881) was interviewed between 1996 and 1998 in four large American cities. With cutoff points of 15 and 22 for the Center for Epidemiological Studies Depression Scale, individual correlates and predictors of distress and depression were examined, and multinomial logistic regression was performed. RESULTS: The 7-day prevalence of depression in men who have sex with men was 17.2%, higher than in adult U.S. men in general. Both distress and depression were associated with lack of a domestic partner; not identifying as gay, queer, or homosexual; experiencing multiple episodes of antigay violence in the previous 5 years; and very high levels of community alienation. Distress was also associated with being of other than Asian/Pacific Islander ethnicity and experiencing

early antigay harassment. Depression was also associated with histories of attempted suicide, child abuse, and recent sexual dysfunction. Being HIV positive was correlated with distress and depression but not significantly when demographic characteristics, developmental history, substance use, sexual behavior, and current social context were controlled by logistic regression. CONCLUSIONS: Rates of distress and depression are high in men who have sex with men. These high rates have important public health ramifications. The predictors of distress and depression suggest prevention efforts that might be effective when aimed at men who have sex with men.

Salomon, E. A., M. J. Mimiaga, et al. (2009). "Depressive symptoms, utilization of mental health care, substance use and sexual risk among young men who have sex with men in EXPLORE: implications for age-specific interventions." *AIDS Behav* **13**(4): 811-21.

The EXPLORE study evaluated a behavioral intervention to prevent HIV infection among MSM. We examined depressive symptoms, utilization of mental health care, substance use and HIV risk taking behaviors in YMSM aged 16-25 years compared with their older counterparts. YMSM were more likely to report depressive symptoms (OR = 1.55) and less likely to report use of counseling (OR = 0.39) or medication (OR = 0.20) for psychiatric conditions. YMSM were more likely to report heavy alcohol and drug use. YMSM more often reported engaging in unprotected insertive (OR = 1.60) and receptive (OR = 2.07) anal intercourse with presumed HIV-uninfected partners, and unprotected receptive (OR = 1.72) anal intercourse with partners of unknown-HIV status. These findings suggest the need for more appropriate and accessible mental health care and substance use services for YMSM. Additionally, HIV prevention work with this population should provide comprehensive education about HIV testing and risk reduction counseling that focuses on communication about serostatus and safety in sexual situations.

Stall, R., T. C. Mills, et al. (2003). "Association of co-occurring psychosocial health problems and increased vulnerability to HIV/AIDS among urban men who have sex with men." *American Journal of Public Health* **93**(6): 939-42.

OBJECTIVES: We measured the extent to which a set of psychosocial health problems have an additive effect on increasing HIV risk among men who have sex with men (MSM). METHODS: We conducted a cross-sectional household probability telephone sample of MSM in Chicago, Los Angeles, New York, and San Francisco. RESULTS: Psychosocial health problems are highly intercorrelated among urban MSM. Greater numbers of health problems are significantly and positively associated with high-risk sexual behavior and HIV infection. CONCLUSIONS: AIDS prevention among MSM has overwhelmingly focused on sexual risk alone. Other health problems among MSM not only are important in their own right, but also may interact to increase HIV risk. HIV prevention might become more effective by addressing the broader health concerns of MSM while also focusing on sexual risks.

Nutrition and Obesity

Austin, S. B., N. J. Ziyadeh, et al. (2009). "Sexual orientation disparities in weight status in adolescence: findings from a prospective study." *Obesity (Silver Spring)* **17**(9): 1776-82.

A growing number of studies among adult women have documented disparities in overweight adversely affecting lesbian and bisexual women, but few studies have examined sexual orientation-related patterns in weight status among men or adolescents. We examined sexual orientation group trends in BMI (kg/m²), BMI Z-scores, and overweight using 56,990 observations from 13,785 adolescent females and males in the Growing Up Today Study (GUTS), a large prospective cohort of US youth. Participants provided self-reported information from six waves of questionnaire data collection from 1998 to 2005. Gender-stratified linear regression models were used to estimate BMI and BMI Z-scores and modified Poisson regression models to estimate risk ratios for overweight, controlling for age and race/ethnicity, with heterosexuals as the referent group. Among females, we observed fairly consistently elevated BMI in all sexual orientation minority groups relative to heterosexual peers. In contrast, among males we documented a sexual-orientation-by-age interaction indicating steeper increases in BMI with age from early-to-late adolescence in heterosexuals relative to sexual orientation minorities. Additional prospective research is needed to understand the determinants of observed sexual orientation disparities and to inform appropriate preventive and treatment interventions. The long-term health consequences of overweight are well-documented and over time are likely to exact a high toll on populations with elevated rates.

Boehmer, U. and D. J. Bowen (2009). "Examining factors linked to overweight and obesity in women of different sexual orientations." *Prev Med*.

OBJECTIVES: Our goal was to examine possible mechanisms for the relationship of sexual minority status and obesity. The mechanisms we considered were energy intake, measured as consumption of fruits and vegetable, past diet attempts and energy expenditure measured as physical activity and number of days when poor physical or mental health interfered with usual activities. We hypothesized that women with a female partner have greater energy imbalance by expending less energy and have higher energy intake than women with a male partner thereby causing overweight and obesity. **METHODS:** The study was a secondary data analysis of the California Women's Health Survey (CWHHS), an annual probability survey that produces a representative sample of the female California population. After pooling data from the years 2001-2005, we obtained a representative sample of 14,197 Californian women. Multiple regression analyses were used to test for mediation. **RESULTS:** We found higher prevalence of overweight and obesity in

sexual minority women. There was no support for mediation in that gender of sexual partner was not significantly related to measures of energy intake and expenditure. CONCLUSIONS: The findings from the present study further implicate sexual minority status in the risk for overweight and obesity, yet do not identify the chosen measures of energy intake and expenditure as mediators for this relationship.

Boehmer, U., D. J. Bowen, et al. (2007). "Overweight and obesity in sexual-minority women: evidence from population-based data." American Journal of Public Health **97**(6): 1134-40.

OBJECTIVE: We sought to determine whether lesbians have higher rates of overweight and obesity than women of other sexual orientations. METHODS: We compared population estimates of overweight and obesity across sexual orientation groups, using data from the 2002 National Survey of Family Growth. RESULTS: Adjusted multinomial logistic regression analyses showed lesbians have more than twice the odds of overweight (odds ratio [OR]=2.69; 95% confidence interval [CI]=1.40, 5.18) and obesity (OR=2.47; 95% CI=1.19, 5.09) as heterosexual women. Bisexuals and women who reported their sexual orientation as "something else" (besides heterosexual, lesbian, or bisexual) showed no such increase in the odds of overweight and obesity. CONCLUSIONS: Lesbian women have a higher prevalence of overweight and obesity than all other female sexual orientation groups. This finding suggests that lesbians are at greater risk for morbidity and mortality linked to overweight and obesity. This finding also highlights the need for interventions within this population.

Social Determinants of Health

Scout, D. (2005). "Social Determinants of Transgender Health." Columbia University School Of Public Health Dissertation.

Transgender people are "compromised survivors" who both experience and challenge gender-based oppression. The term "transgender" describes a diverse population of people whose identity does not conform to normative gender expectations. Transgender people experience adverse health outcomes unlikely to be biological in nature, and are best understood in terms of social determinants of health. The social determinants framework contextualizes transgender health outcomes, situating them within a larger social context of discriminatory gender oppression. Life history interviews with 13 transgender people, focus groups with 16 transgender people and 9 in-depth interviews with "key informants" suggest that stress, (lack of) social support, and social exclusion are the primary social determinants of transgender health. Violence-related stress is most pronounced. Violence against transgender people is associated with level of gender variance; transgender people who regularly "pass" as either gender reported lower frequency

of violence. Almost all participants reported frequent fear of violence. Hair-trigger violence, or sudden unprovoked aggression, was an important phenomenon among male-to-female (MTF) vector transgender people. Violence is often experienced within sexual relationships or within the context of sex work. Internal gender oppression creates another layer of stress, often manifesting itself through addictions. For some participants, addiction problems were resolved on “transition” from birth to true gender. Social support is weak or absent for many transgender people. Participants experience alienation from families-of-origin, friend networks, and potential romantic partners. Social exclusion of transgender people further compromises their health status. Exclusion from healthcare, education, housing, and employment means that transgender people often lack access to basic resources. Some female-to-male (FTM) participants experience an improvement in social standing if they “pass” as male, but this is tempered with concomitant exposure to gender bias. The demographic factors of SES, race, gender vector (MTF or FTM), and ability to pass as gender normative have an interactive effect with social determinants. A diverse participant pool allows for the observation of gender-related trends across race and class. The approach used to recruit a diverse group of participants from a hard-to-reach population was successful and can serve to inform work with other populations.

Tobacco Use

2010). "Smoking Out A Deadly Threat: Tobacco Use in the LGBT Community." American Lung Association. <<http://www.lungusa.org/assets/documents/publications/lung-disease-data/lgbt-report.pdf>> Accessed on July 12, 2010.

Austin, S. B., N. Ziyadeh, et al. (2004). "Sexual orientation and tobacco use in a cohort study of US adolescent girls and boys." Archives of Pediatrics and Adolescent Medicine **158**(4): 317-22.

OBJECTIVE: To examine sexual-orientation group disparities in tobacco use in adolescent girls and boys. **DESIGN:** Survey data from 10685 adolescent girls and boys participating in 1999 in the Growing Up Today Study were examined cross-sectionally. **SETTING:** Community-based population of adolescents living throughout the United States. **Main Outcome Measure** Prevalence of tobacco use. **RESULTS:** Ninety-two percent of the participants described themselves as heterosexual (n = 9296), 5% as mostly heterosexual (n = 511), 1% as lesbian/gay/bisexual (n = 103), and 2% as unsure (n = 226). Ages ranged from 12 to 17 years. Compared with heterosexuals, mostly heterosexual girls were 2.5 (95% confidence interval, 1.8-3.5), lesbian/bisexual girls were 9.7 (95% confidence interval, 5.1-18.4), and mostly heterosexual boys were 2.5 (95% confidence interval, 1.4-4.6) times more likely to smoke at least weekly. In contrast, gay/bisexual boys were not more likely to smoke.

Findings persisted even when controlling for multiple sociodemographic and psychosocial covariates. **CONCLUSION:** Our findings indicate that mostly heterosexual adolescents of both sexes and lesbian/bisexual girls are at heightened risk for tobacco use.

Buchting, F. O., Scout (2008). "Lesbians, Gays, Bisexuals, and Transgenders of Color Sampling Methodology: Strategies for Collecting Data in Small, Hidden, or Hard-to-Reach Groups to Reduce Tobacco-Related Health Disparities, Tobacco Research Network on Disparities." *Trend*.

<<http://cancercontrol.cancer.gov/tcrb/trend/lgbt/docs/LGBTReport508.pdf>> Accessed on July 12, 2010.

Greenwood, G. L., J. P. Paul, et al. (2005). "Tobacco use and cessation among a household-based sample of US urban men who have sex with men." *American Journal of Public Health* **95**(1): 145-51.

OBJECTIVES: We examined tobacco use and cessation among a probability sample of urban men who have sex with men (MSM) living in 4 large US cities. **METHODS:** Of the 2402 men who were eligible for follow-up from a previously recruited probability sample, 1780 (74%) completed tobacco surveys between January and December 1999. **RESULTS:** Current smoking rates were higher for urban MSM (31.4%; 95% confidence interval [CI]=28.6%, 34.3%) than for men in the general population (24.7%; 95% CI=21.2%, 28.2%). Among MSM, 27% were former smokers. A complex set of sociodemographic, tobacco-related, and other factors were associated with cessation. **CONCLUSIONS:** Results support earlier reports that smoking rates are higher for MSM compared with men in the general population. Findings related to cessation underscore the need to target tobacco control efforts for MSM.

Gruskin, E. P., G. L. Greenwood, et al. (2007). "Disparities in smoking between the lesbian, gay, and bisexual population and the general population in California." *American Journal of Public Health* **97**(8): 1496-502.

OBJECTIVES: We conducted a large, population-based study to assess tobacco use in California's lesbian, gay, and bisexual (LGB) population. **METHODS:** Standard measures of tobacco use from 2 separate, statewide household-based studies were used to compare basic prevalence rates in the LGB population and the general population in California. Data were derived from a 2003-2004 survey of LGB individuals living in California as well as from the 2002 version of the California Tobacco Survey, which gathered data on the state's general population. **RESULTS:** Smoking prevalence rates were higher in our sample of lesbians, bisexual women, and women who have sex with women than among women in the general California population. In the case of men, the only significant difference was that rates were higher among gay men than among men in the general population. Disparities in tobacco use between the LGB population and the general population were still evident

after we controlled for key demographic variables and in comparisons with other tobacco use indicators such as average cigarette consumption. **CONCLUSIONS:** Tobacco control efforts targeting the LGB population are needed to reduce this group's high rate of cigarette smoking.

Hughes, T. L., T. P. Johnson, et al. (2008). "Sexual orientation and smoking: results from a multisite women's health study." Subst Use Misuse **43**(8-9): 1218-39.

Although lesbians are believed to be at disproportionately high risk for smoking, few published studies have focused on smoking rates in this population. We examined and compared rates and demographic correlates of smoking among 550 lesbians and 279 heterosexual women in Chicago, Minneapolis/St. Paul, and in New York City in 1994-1996 using a self-administered survey questionnaire. African-American lesbians were more likely than African-American heterosexual women or White lesbians to be current smokers. For the sample as a whole, education was the most robust predictor of both current and lifetime smoking. Racial/ethnic minority lesbians with high school education or less were most likely to report both current and lifetime cigarette smoking. The study's limitations are noted.

Lee, J. G., G. K. Griffin, et al. (2009). "Tobacco use among sexual minorities in the USA, 1987 to May 2007: a systematic review." Tobacco Control **18**(4): 275-82.

OBJECTIVES: This paper examines the prevalence of tobacco use among sexual minorities in the US through a systematic review of literature from 1987 to May 2007. **METHODS:** Seven databases were searched for peer-reviewed research (Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Library via Wiley InterScience, Education Resources Information Center (ERIC), Health Source: Nursing/Academic, Institute for Scientific Information (ISI) Web of Science, PsycINFO via EBSCO Host and PubMed). No language restrictions were used. Abstracts were identified in the literature search (n = 734) and were independently read and coded for inclusion or exclusion by two reviewers. When agreement was not reached, a third reviewer acted as arbitrator. Abstracts were included if they presented data collected in the US from 1987 to May 2007 and reported prevalence or correlation of tobacco use with sexual minority status. Studies reporting data from HIV-positive samples were excluded. The identified articles (n = 46) were independently read by two reviewers who recorded key outcome measures, including prevalence and/or odds ratios of tobacco use, sample size and domain of sexuality (identity, behavior, or desire). Factors relating to study design and methodology were used to assess study quality according to nine criteria. **RESULTS:** In the 42 included studies, 119 measures of tobacco prevalence or association were reported. The available evidence points to disparities in smoking among sexual minorities that are significantly higher than among the general population. **CONCLUSIONS:** Ongoing, targeted interventions addressing smoking among sexual minorities are warranted in tobacco control programs.

Ryan, H., P. M. Wortley, et al. (2001). "Smoking among lesbians, gays, and bisexuals: a review of the literature." American Journal of Preventive Medicine **21**(2): 142-9.

OBJECTIVES: To collect estimates of smoking prevalence among lesbian, gay, and bisexual people from the published literature and to compare with general population estimates. **METHODS:** Databases were searched for all studies published in English on tobacco use among lesbians, gays, and bisexuals. From 1987 through 2000, twelve studies were identified (four youth, eight adult): seven were based on convenience samples; one on a population-based probability sample; one involved random sampling within selected census tracts; one was based on a large multi-center clinical trial; and two were representative school-based samples. Study findings were compared to national survey data from the corresponding time period. **RESULTS:** Estimated smoking rates for lesbians, gays, and bisexuals ranged from 38% to 59% among youth and from 11% to 50% among adults. National smoking rates during comparable periods ranged from 28% to 35% for adolescents and were approximately 28% for adults. **CONCLUSIONS:** While information in the published literature is limited, it appears that smoking rates are higher among adolescent and adult lesbians, gays, and bisexuals than in the general population. Steps should be taken to ensure representation of lesbians, gays, and bisexuals in tobacco-use surveillance and to collect data in order to understand the apparent high smoking rates in these groups. Attempts should be made to target prevention and cessation interventions to lesbians, gays, and bisexuals.

Substance Abuse

Bostwick, W. B., S. E. McCabe, et al. (2007). "Drinking patterns, problems, and motivations among collegiate bisexual women." Journal of American College Health **56**(3): 285-92.

OBJECTIVE AND PARTICIPANTS: The authors compared the drinking behaviors, motivations, and problems of collegiate bisexual women with those of heterosexual women (N = 2,788; n = 86 bisexual women). **METHODS:** Data came from the 2003 Student Life Survey, a random population-based survey at a large midwestern university. The authors explored the hypothesis that bisexual women would be more likely than heterosexual women to report drinking motivations related to stress and coping as a result of sexual identity stigma. **RESULTS:** They found that bisexual women drank significantly less than did heterosexual women. There were few differences between the 2 groups in drinking motivations and problems. Bisexual women reported a comparable number of problems related to their drinking but were significantly more likely to report contemplating suicide after drinking than were heterosexual women. **CONCLUSIONS:** More research is needed to understand the finding that despite lower levels of alcohol consumption, bisexual women reported a comparable number of drinking problems. College health educators and health care

providers need to be aware of findings related to heightened suicidal risk among bisexual women.

Cochran, S. D., D. Ackerman, et al. (2004). "Prevalence of non-medical drug use and dependence among homosexually active men and women in the US population." Addiction **99**(8): 989-98.

AIMS: The aim of this study was to compare patterns of drug use and dependence between homosexually experienced and exclusively heterosexually experienced individuals. **DESIGN:** We used a cross-sectional national household interview survey conducted in the United States. **SETTING:** Secondary data analysis of the 1996 National Household Survey on Drug Abuse was employed. **PARTICIPANTS:** Participants were sexually active individuals, aged 18 years and older, who reported the genders of their sexual partners in the past 12 months; included 174 homosexually experienced (98 men, 96 women) and 9714 exclusively heterosexually experienced (3922 men, 5792 women) respondents. **MEASUREMENTS:** Life-time, past 30 days and daily use of nine classes of drugs. Symptoms of dysfunctional use and dependence. **FINDINGS:** There were consistent patterns of elevated drug use in homosexually experienced individuals for life-time drug use, but these were greatly attenuated for recent use. Homosexually experienced men were more likely to report use of marijuana, cocaine and heroin, and homosexually experienced women more likely to report use of marijuana and analgesics than individuals reporting only opposite-sex partners. Both homosexually active men and women were more likely than exclusively heterosexually active respondents to report at least one symptom indicating dysfunctional drug use across all drug classes, and to meet criteria for marijuana dependence syndrome. The only difference between homosexually experienced men and women was that men were more likely to report any daily drug use. **CONCLUSIONS:** These data are consistent with surveys suggesting that there is a moderate elevation of drug, particularly marijuana, use and dependence in gay and bisexual men and women when compared to heterosexual men and women.

Corliss, H. L., M. Rosario, et al. (2008). "Sexual orientation disparities in longitudinal alcohol use patterns among adolescents: findings from the Growing Up Today Study." Arch Pediatr Adolesc Med **162**(11): 1071-8.

OBJECTIVE: To compare sexual orientation group differences in the longitudinal development of alcohol use behaviors during adolescence. **DESIGN:** Community-based prospective cohort study. **SETTING:** Self-reported questionnaires. **PARTICIPANTS:** A total of 13,450 Growing Up Today Study participants (79.7% of the original cohort) aged 9 to 14 years at baseline in 1996 were followed up for more than 7 years. Main Exposure Self-reported sexual orientation classified as heterosexual, mostly heterosexual, bisexual, or gay/lesbian. **MAIN OUTCOME MEASURES:** Age at alcohol use initiation, any past-month drinking, number of

alcoholic drinks usually consumed, and number of binge drinking episodes in the past year. RESULTS: Compared with heterosexual participants, youth reporting any minority sexual orientation reported having initiated alcohol use at younger ages. Greater risk of alcohol use was consistently observed for mostly heterosexual males and females and for bisexual females, whereas gay and bisexual males and lesbians reported elevated levels of alcohol use on only some indicators. Gender was an important modifier of alcohol use risk; mostly heterosexual and bisexual females exhibited the highest relative risk. Younger age at alcohol use initiation among participants with minority sexual orientations significantly contributed to their elevated risk of binge drinking. CONCLUSIONS: Our findings suggest that disparities in alcohol use among youth with a minority sexual orientation emerge in early adolescence and persist into young adulthood. Health care providers should be aware that adolescents with a minority sexual orientation are at greater risk of alcohol use.

Marshal, M. P., M. S. Friedman, et al. (2008). "Sexual orientation and adolescent substance use: a meta-analysis and methodological review." *Addiction* **103**(4): 546-56.

AIMS: Several decades of research have shown that lesbian, gay and bisexual (LGB) adults are at high risk for substance use and substance use disorders (SUDs). These problems may often start prior to young adulthood; however, relatively little is known about risk for substance use in LGB adolescents. The primary aims of this paper were to conduct a meta-analysis of the relationship between sexual orientation and adolescent substance use and a systematic review and critique of the methodological characteristics of this literature. METHODS: Medical and social science journals were searched using Medline and PsychInfo. Studies were included if they tested the relationship between sexual orientation and adolescent substance use. Eighteen published studies were identified. Data analysis procedures followed expert guidelines, and used National Institutes of Health (NIH)-sponsored meta-analysis software. RESULTS: LGB adolescents reported higher rates of substance use compared to heterosexual youth (overall odds ratio = 2.89, Cohen's $d = 0.59$). Effect sizes varied by gender, bisexuality status, sexual orientation definition and recruitment source. None of the studies tested mediation and only one tested moderation. One employed a matched comparison group design, one used a longitudinal design, and very few controlled for possible confounding variables. CONCLUSIONS: The odds of substance use for LGB youth were, on average, 190% higher than for heterosexual youth and substantially higher within some subpopulations of LGB youth (340% higher for bisexual youth, 400% higher for females). Causal mechanisms, protective factors and alternative explanations for this effect, as well as long-term substance use outcomes in LGB youth, remain largely unknown.

McCabe, S. E., W. B. Bostwick, et al. (2010). "The Relationship Between Discrimination and Substance Use Disorders Among Lesbian, Gay, and Bisexual Adults in the United States." American Journal of Public Health.

Objectives. We examined the associations between 3 types of discrimination (sexual orientation, race, and gender) and substance use disorders in a large national sample in the United States that included 577 lesbian, gay, and bisexual (LGB) adults. **Methods.** Data were collected from wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions, which used structured diagnostic face-to-face interviews. **Results.** More than two thirds of LGB adults reported at least 1 type of discrimination in their lifetimes. Multivariate analyses indicated that the odds of past-year substance use disorders were nearly 4 times greater among LGB adults who reported all 3 types of discrimination prior to the past year than for LGB adults who did not report discrimination (adjusted odds ratio=3.85; 95% confidence interval=1.71, 8.66). **Conclusions.** Health professionals should consider the role multiple types of discrimination plays in the development and treatment of substance use disorders among LGB adults.

McCabe, S. E., T. L. Hughes, et al. (2009). "Sexual orientation, substance use behaviors and substance dependence in the United States." Addiction **104**(8): 1333-45.

AIMS: To assess past-year prevalence rates of substance use behaviors and substance dependence across three major dimensions of sexual orientation (identity, attraction and behavior) in a large national sample of adult women and men in the United States. **DESIGN:** Data were collected from structured diagnostic face-to-face interviews using the Alcohol Use Disorder and Associated Disabilities Interview Schedule DSM-IV version IV (AUDADIS-IV). **SETTING:** Prevalence estimates were based on data collected from the 2004-2005 (wave 2) National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). **PARTICIPANTS:** A large national sample of 34 653 adults aged 20 years and older: 52% female, 71% white, 12% Hispanic, 11% African American, 4% Asian and 2% Native American. **FINDINGS:** Approximately 2% of the population self-identified as lesbian, gay or bisexual; 4% reported at least one life-time same-sex sexual partner and 6% reported same-sex sexual attraction. Although non-heterosexual orientation was generally associated with a higher risk of substance use and substance dependence, the majority of sexual minority respondents did not report substance use or meet criteria for DSM-IV substance dependence. There was considerable variation in substance use outcomes across sexual orientation dimensions; these variations were more pronounced among women than among men. **CONCLUSIONS:** Results support previous research findings of heightened risk of substance use and substance dependence among some sexual minority groups and point to the need for research that examines the reasons for such differences. Results also highlight important gender differences and question previous findings indicating uniformly higher risk for substance dependence among sexual minorities.

Risks appear to vary based on gender and how sexual orientation is defined. Findings have implications for more effective prevention and intervention efforts that target subgroups at greatest risk.

Parks, C. A. and T. L. Hughes (2005). "Alcohol use and alcohol-related problems in self-identified lesbians: age and racial/ethnic comparisons." J Lesbian Stud **9**(3): 31-44.

Age cohort and racial/ethnic differences in alcohol-use patterns and alcohol-related problems were examined in a diverse sample of self-identified lesbians using data from the Chicago Health and Life Experiences of Women Study (CHLEW).

Significant differences in lifetime drinking patterns and lifetime alcohol-related problems were found across three generational cohorts; few differences were found across racial/ethnic groups. Findings are discussed in relation to previous research on lesbian alcohol use.

Stall, R., J. P. Paul, et al. (2001). "Alcohol use, drug use and alcohol-related problems among men who have sex with men: the Urban Men's Health Study." Addiction **96**(11): 1589-601.

AIMS: To measure the prevalence and independent associations of heavy and problematic use of alcohol and recreational drugs among a household-based sample of urban MSM (men who have sex with men). DESIGN: Cross-sectional survey.

PARTICIPANTS: Men who identified as being gay or bisexual or who reported sex with another man in the prior 5 years were included in this analysis (n = 2172).

SETTING: A probability telephone sample of MSM was taken within Zip Codes of four large American cities (Chicago, Los Angeles, New York and San Francisco) estimated to have total concentrations of at least 4% of all households with one resident MSM.

MEASUREMENTS: Standard measures of alcohol use, problems associated with alcohol use, and recreational drug use were administered by trained telephone interviewers.

FINDINGS: Both recreational drug (52%) and alcohol use (85%) were highly prevalent among urban MSM, while current levels of multiple drug use (18%), three or more alcohol-related problems (12%), frequent drug use (19%) and heavy-frequent alcohol use (8%) were not uncommon.

The associations of heavy and/or problematic substance use are complex, with independent multivariate associations found at the levels of demographics, adverse early life circumstances, current mental health status, social and sexual practices and connection to gay male culture.

CONCLUSIONS: The complex pattern of associations with heavy and/or problematic substance use among urban MSM suggests that heavy and/or problematic substance use is grounded in multiple levels: the individual, the interpersonal and the socio-cultural.

Wilsnack, S. C., T. L. Hughes, et al. (2008). "Drinking and drinking-related problems among heterosexual and sexual minority women." J Stud Alcohol Drugs **69**(1): 129-39.

OBJECTIVE: Studies of alcohol use among lesbians have typically used convenience samples with uncertain generalizability or general population samples with small numbers of lesbians. Here we compare rates of high-risk and problem drinking in a large sample of Chicago-area lesbians and a national sample of age- and education-matched urban heterosexual women. **METHOD:** Data came from comparable face-to-face interviews with 405 self-identified Chicago-area lesbians and with 548 urban women from a U.S. national sample. Rates of hazardous drinking (heavy episodic drinking, intoxication, drinking-related problems, alcohol-dependence symptoms) were compared for exclusively heterosexual, mostly heterosexual, bisexual, mostly lesbian, and exclusively lesbian subgroups. **RESULTS:** Exclusively heterosexual women had lower rates than did all other women on all measures of hazardous drinking. Exclusively heterosexual women also reported less childhood sexual abuse, early alcohol use, and depression. Bisexual women reported more hazardous drinking indicators and depression than did exclusively or mostly lesbian women. **CONCLUSIONS:** These results indicate that sexual minority women are likely to have elevated risks of hazardous drinking. The differences between lesbian and bisexual women suggest that more attention is needed to subgroup differences among sexual minority women. Health care providers need to know the sexual identity of their patients and how their sexual identity may affect their risks for hazardous drinking. Higher rates of childhood sexual abuse, early drinking, and depression among sexual minority women suggest that these experiences may be important in assessing and treating problems related to their drinking, and in developing prevention and early intervention strategies.