



Published in final edited form as:

Subst Use Misuse. 2017 January 02; 52(1): 100–107. doi:10.1080/10826084.2016.1222620.

Life Chaos and Perceived Social Support Among Methamphetamine-Using Men Who Have Sex with Men Engaging in Transactional Sexual Encounters

Humsini Viswanath, MPH, J. Michael Wilkerson, PhD, MPH, Ellen Breckenridge, PhD, MPH, and Beatrice J. Selwyn, ScD, MSc Hyg

The University of Texas Health Science Center at Houston (UTHealth) School of Public Health

Abstract

Objective—Social support and life chaos have been inversely associated with increased risk of HIV infection. The purpose of this study was to explore among a sample of HIV-negative methamphetamine-using men who have sex with men (MSM) the association between engaging in transactional sex, life chaos, and low social support.

Methods—HIV-negative methamphetamine-using MSM completed an online questionnaire between July and October 2012 about recent substance use and sexual behavior. Bivariate and multivariate tests were used to obtain statistically significant associations between demographic characteristics, engaging in transactional sex, life chaos, and the participants' perception of their social support.

Results—Of the 325 participants, 23.7% reported engaging in transactional sex, 45.2% reported high life chaos, and 53.5% reported low perceived social support. Participants who engaged in transactional sex were more likely to have high life chaos than participants who did not (aOR = 1.70, 95% CI = [1.01, 2.84]); transactional sex was not associated with social support. Participants with high life chaos were more out about their sexual orientation (aOR = 2.29, 95% CI = [1.18, 4.42]) and more likely to perceive they had low social support (aOR = 3.78, 95% CI = [2.31, 6.22]) than participants with low life chaos. Non-Latinos perceived they had less social support than Latinos (aOR = 0.48, 95% CI = [0.25, 0.92]).

Conclusions—Methamphetamine-using MSM engaging in transactional sex experience more life chaos than those who do not engage in transactional sex. Outness, perceived social support, and ethnicity are associated with life chaos.

Keywords

substance abuse; gay men; HIV prevention; transactional sex; psychosocial determinants

Please direct all correspondence to J. Michael Wilkerson, PhD, MPH, Center for Health Promotion and Prevention Research, Division of Health Promotion and Behavioral Sciences, School of Public Health, The University of Texas Health Science Center at Houston, 7000 Fannin, Suite 2620, Houston, TX 77030. Phone: 713.500.9974. Fax: 713.500.9750. Johnny.M.Wilkerson@uth.tmc.edu.

CONFLICT OF INTEREST

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

INTRODUCTION

The updated National HIV/AIDS Strategy for the United States has as one of its goals to reduce new HIV infections among men who have sex with men (MSM) (The White House Office of National AIDS Policy, 2015). To achieve this goal, it is critical that we identify the determinants of risk for sub-populations of MSM engaging in high risk behaviors, including sub-populations engaging in substance use and transactional sex, to inform the development of new interventions. MSM engaging in regular substance use and transactional sex (TS) appear to be at a greater risk of infection than MSM who do not (Koken, Parsons, Severino, & Bimbi, 2005; Vosburgh, Mansergh, Sullivan, & Purcell, 2012). Methamphetamine use increases risk among MSM because the drug tends to increase sexual desire, lower inhibitions/increase conscious risk-taking, and be consumed in combination with alcohol or other drugs in social, often sexualized environments (Chen et al., 2013; Chew Ng et al., 2013; Grov, Rendina, Ventuneac, & Parsons, 2013; Lea, Prestage, et al., 2013; Lea, Reynolds, & de Wit, 2013; McCarty-Caplan, Jantz, & Swartz, 2013; Santos et al., 2013). TS increases risk among MSM because of structural barriers (e.g., stigmatizing laws and cultural norms), the number of sex partners, and inconsistent condom use, especially between paid and casual sex partners (Fujimoto, Williams, & Ross, 2013; Reidy, 2008). Most of the research on MSM who engage in TS focuses on individuals who engage in survival sex or who identify as male sex workers (Browne & Minichiello, 1996; Calhoun & Weaver, 1996; Estcourt et al., 2000; Joffe & Dockrell, 1995; Minichiello et al., 2000; Newman et al., 2004; Parsons et al., 2004; Weber et al., 2001; Williams et al., 2003). In this study, we include MSM who define TS more broadly to include MSM who exchange sex for drugs, money, or something else (housing, food, etc.). We examine the extent to which perceived social support, an individual's perceived support from family, friends, or a significant other (Zimet et al., 1988) and life chaos (Hays et al., 1990; Hays et al., 1992; Leserman et al., 1999) might be associated with regular substance use and recent TS encounters.

Social support is an individual's perceived social support from family, friends, or a significant other (Zimet et al., 1988). Individuals with less social support likely have weaker social ties. The theoretical literature on social ties posits that the health of MSM is affected by the strength of primary (family members and close friends) and secondary (acquaintances and coworkers) social ties. When facing intolerance from their primary social ties, methamphetamine-using MSM who engage in TS may experience a loss of social support. This lack of social support can create a loss of perceived control and a perceived loss of self-efficacy (Thoits, 2011). Theoretically, these undesirable outcomes could be moderated by supportive secondary ties, especially when these ties include other individuals experiencing and coping with similar issues.

To our knowledge, no studies have quantitatively examined perceived social support among methamphetamine-using MSM who engage in TS. Most studies of perceived social support among MSM focus on improving the lives of HIV-positive MSM (Friedland, Renwick, & McColl, 1996; Hays, Chauncey, & Tobey, 1990; Hays, Turner, & Coates, 1992) by buffering life event stressors (Hays et al., 1990; Hays et al., 1992; Leserman et al., 1999; Turner, Hays, & Coates, 1993). Even fewer studies explore perceived social support among men who

engage in TS. Two qualitative studies of men who reported engaging in TS (Smith & Seal, 2008a; Smith & Seal, 2008b) found that condom use was greater among those who felt they had strong social support. In general, persons who perceive themselves to have strong social support report less life chaos, defined here as lacking a daily routine or a plan for the future, and failing to be on time (Hays et al., 1990; Hays et al., 1992; Leserman et al., 1999). Greater life chaos is negatively associated with retention in care among persons living with HIV (Mugavero et al., 2009; Wong et al., 2007), an important health outcome given the current focus on the HIV treatment cascade (Center for Disease Control and Prevention, 2011; The White House Office of National AIDS Policy, 2015).

Among MSM, studies of life chaos have primarily focused on how it relates to health care use and health status in people living with HIV/AIDS (Mugavero et al., 2009; Wong et al., 2007). It is imperative to study the association between life chaos and TS because life event stressors, as defined by Mugavero et al. (2009), such as financial problems and sexual or physical assault, are also seen within the methamphetamine-using MSM population. In fact, a study conducted among drug-using MSM observed that 62.5% were involved in sex trading, and trading sex was associated with childhood maltreatment (OR=2.62) and homelessness (OR=1.88) (Newman et al., 2004). Qualitative studies have found that male sex workers include financial gain in their decision-making, and increased economic incentives facilitate a male sex worker to partake in risky behavior with a client (Calhoun & Weaver, 1996; Smith & Seal, 2008a; Smith & Seal, 2008b). While life chaos is apparent in the lives of drug-using men who engage in TS, the association between a quantified measurement of life chaos and TS among methamphetamine-using MSM needs to be studied.

Along with social support and life chaos, certain demographic variables may also characterize methamphetamine-using MSM who engage in TS. Wong et al. (2006) showed having a spouse or partner was associated with less chaos, while having a history of homelessness, previous incarceration, and one or more unmet needs was associated with greater chaos (Wong et al., 2007). Among these potential covariates for life chaos, homelessness (Newman et al., 2004) was positively associated with male sex work. McDowell et al. (2007) observed that increased education and people of color were significantly associated with perceived social support from friends and family, respectively (McDowell & Serovich, 2007). Hence, race, education level, and homelessness should be studied further to better characterize methamphetamine-using MSM engaging in TS.

METHODS

Study Design

The purpose of this study was to examine the extent to which perceived social support and life chaos were associated with regular substance use and recent TS encounters. Between July and October 2012, 343 methamphetamine-using MSM were recruited into the *parTy* study using online recruitment strategies (Wilkerson, Shenk, Grey, Rosser, & Noor, 2015). Eligibility criteria were self-report as male, age 18 or older, living in the United States or one of its territories, having sex with a man during the previous 30 days, and having used methamphetamine during the previous 30 days. Participants were compensated \$25 for

completing the survey. The institutional review boards of the authors' universities approved all study procedures. This analysis was restricted to 325 participants who reported being HIV-negative.

Measures

The questionnaire combined widely used instruments. Participants responded to questions about recent substance use, sexual behavior, and various psychosocial measures. All items included a "refuse to answer" option. The instruments were assessed to be at a fourth-grade reading level (Canty-Mitchell & Zimet, 2000; Wong et al., 2007).

Outcome Measure

Transactional sex—TS was determined by the following question: "Of the <number> men you had sex with in the last 30 days, did you exchange sex for drugs, money, or something else (housing, food, etc.) with any of them?" The question elucidates the men who bought, sold, and bought or sold sex in the past 30 days. The men answered "Yes," "No," or "Refused to Answer." Participants who answered "Yes," were prompted to indicate the number of partners they sold sex to or bought sex from for "drugs" or "money, housing, or food."

Explanatory Measures

Perceived social support—Perceived social support was assessed using the Multidimensional Scale of Perceived Social Support (Zimet et al., 1988). The 12-item instrument assessed perceived social support from family, friends, and significant others using a 5-point Likert-type scale, ranging from *1 = strongly disagree* to *5 = strongly agree*, with higher scores suggesting greater levels of perceived social support. In this sample, the instrument demonstrated a Cronbach's alpha of 0.80 for internal consistency. After calculating a perceived social support score for each participant, we used the median to split the sample into two categories, those experiencing low and high perceived social support.

Life chaos—Life chaos was measured using the Life Chaos Scale (Wong et al., 2007). The instrument included concepts of daily routine, ability to plan and anticipate for the future, and being on time. The Life Chaos Scale used the 5-point Likert scale, ranging from *1 = strongly disagree* to *5 = strongly agree*, with higher scores suggesting greater levels of life chaos. In this sample, the Life Chaos instrument demonstrated a Cronbach's alpha of 0.64 for internal consistency. After calculating a life chaos score for each participant, we used the median to split the sample into two categories, those experiencing low and high life chaos.

Covariates

Demographic characteristics included age, education, race, ethnicity, sexual orientation, relationship status, housing, and employment status. Participant's education was dichotomized based on whether they had a Bachelor's degree. Race was dichotomized based on whether they were a person of color, and ethnicity was dichotomized based on whether they were Latino. Sexual orientation was assessed by one item that asked participants to indicate the degree to which they were out about their sexuality (e.g., bisexual or gay) to

people they knew (Wilkerson, Noor, Galos, & Rosser, 2015). To have approximately equal number of participants in each category, responses were collapsed into three categories: (1) open (out) to no one or a few people I know, (2) open (out) to about half the people I know, and (3) open (out) to most or all people I know. Relationship status was categorized as single, in a long-term relationship (more than 90 days) with one person, or in a long-term relationship (more than 90 days) with two or more people. One item asked participants to indicate their housing status. Responses were collapsed into three categories: own residence, rent, or impermanent housing. Employment status was categorized as student, employed, and unemployed.

Data Analysis

All ineligible, duplicate, and HIV-positive observations were removed from the dataset; the dataset included few HIV positive persons ($n=7$), so removing them allowed for a more homogenous sample. Questions participants refused to answer were considered missing. After examining the frequency distributions of each variable, bivariate analyses were performed to determine the significant associations ($p < 0.05$) between risk factors with TS, high life chaos, and low perceived social support. Risk factors with a significant association were incorporated into logistic regression models as confounding variables. All analyses were carried out using Stata 12 (StataCorp LP, College Station, TX, USA).

RESULTS

Participant Characteristics

Responses were collected from 325 HIV-negative methamphetamine-using MSM. The mean age of participants was 28.9 ($SD = 4.8$). A majority of the participants were White (56.4%) and non-Latino (80.9%). Although more than half of the participants had not completed a Bachelor's degree (58.2%), most were employed (80.3%), earned \$60,000 or more annually (52.7%), and owned the residence in which they lived (52.6%). Regarding outness (openness) to people they knew about their same-sex attraction, 28.3% were out to most or all people they knew, 39.7% were out to about half, and 32.0% were out to a few people or no one. Slightly more than three-quarters of the participants were in a long-term relationship with one or more persons for at least 90 days (77.9%). Nearly a quarter of participants (23.8%) had participated in at least one TS encounter in the past 30 days. Slightly less than half of the participants reported high life chaos (45.5%). Slightly more than half (54%) reported low social support.

Bivariate and Multivariate Analyses

Chi-square tests were used to examine associations between participant characteristics, TS encounters, life chaos, and perceived social support (Table 1). Engaging in TS was significantly associated with high life chaos, but not with participant baseline characteristics or perceived social support. Low perceived social support was associated with being non-Latino, being employed, owning a residence, greater outness, and high life chaos. High life chaos was associated with being White and non-Latino, owning a residence, and having low perceived social support.

Multivariate logistic regression was used to obtain adjusted odds ratios for each variable with a significant Chi-square test (Table 2). Because this was an exploratory study, life chaos and social support were treated as exposure and explanatory variables for the each other. Participants who engaged in TS were more likely to have high life chaos than participants who did not engage in TS (aOR = 1.70, 95% CI = [1.01, 2.84]). Participants with high life chaos were more likely to be out to most or all people they knew (aOR = 2.29, 95% CI = [1.18, 4.42]) and to have low perceived social support (aOR = 3.78, 95% CI = [2.31, 6.22]) than participants with low life chaos. Participants with low perceived social support were less likely to be Latino (aOR = 0.48, 95% CI = [0.25, 0.92]) and more likely to have high life chaos than participants with high social support (aOR = 3.97, 95% CI = [2.40, 6.57]).

DISCUSSION

We observed that engaging in TS was positively associated with high life chaos. We also observed that high life chaos was positively associated with low perceived social support and outness about one's sexuality to most or all family, friends, and coworkers. Latino participants experienced greater perceived social support than non-Latino participants.

These findings support the conclusions of other studies that have found correlations between engaging in TS and high life chaos, and low perceived social support (Calhoun & Weaver, 1996; Newman et al., 2004; Smith & Seal, 2008a; Smith & Seal, 2008b). By contrast, although this study found that high life chaos had an association with TS, we did not find a similar association between TS and perceived social support. Because the sample population was relatively homogenous (i.e., mostly educated and middle class) and we relied on online recruitment procedures, we might not have captured the full spectrum of methamphetamine-using MSM with low perceived social support scores. This raises interesting questions about how the recruitment method may influence the resulting sample. In this study, for example, we wanted a sample of methamphetamine-using MSM whom addiction experts might describe as recreational or functional users; thus, the online recruitment method seemed appropriate. The limited variability in participants' perceived social support scores in this study suggest that other recruitment methods would be needed for studies focusing on MSM from across the substance-using spectrum.

Although perceived social support did not have a statistically significant association with TS in this study, low perceived social support was positively associated with high life chaos. Previous studies have discussed how perceived strong social support might buffer life event stressors (Hays et al., 1990; Hays et al., 1992; Leserman et al., 1999; Turner et al., 1993). Individuals with low perceived social support might find it more difficult to buffer life events, and in turn, have higher life chaos.

Methamphetamine-using MSM who were out about their sexuality to most or all people they knew experienced more life chaos. We also found that low perceived social support had a borderline significant positive association with people who are out to most or all people they knew. It could be that persons who are more out experience more life chaos because they must live within a heteronormative society, even while finding social support from other MSM or allies. To our knowledge, there have been no other studies examining the

relationship between outness and life chaos. Further studies are needed to understand this relationship.

We observed that Latino participants experienced higher perceived social support than non-Latino participants. In general, African Americans, Asians, and Latinos, compared to Whites, receive most of their perceived social support from parents and children (Kim & McKenry, 1998). However, MSM perceive more social support from friends than from family (McDowell & Serovich, 2007). Research is needed to understand how perceived social support differs between Latino and non-Latino methamphetamine-using MSM and how that support may influence patterns of behavior.

There are four main limitations for this study. First, the Cronbach's alpha is slightly lower than the acceptable range, however, this may be due to the low number of questions in the survey. Second, this study uses data from a cross-sectional online survey. In such a design, the temporal precedence of psychosocial factors in methamphetamine-using MSM who engage in TS cannot be assumed. Third, the questionnaire's primary intent was to understand harm reduction strategies among the methamphetamine-using MSM population, not to understand motivations for engaging in TS. Fourth, the sample was recruited online, primarily through social media. It cannot be assumed that findings from this study are generalizable to all methamphetamine-using MSM because some might not have access to or use social media. Despite these limitations, this study is significant because of its contribution to our understanding of the associations between perceived social support, life chaos, and the participation in TS among methamphetamine-using MSM.

Our findings have implications for intervention development. If, as our data suggest, individuals with low perceived social support have difficulty buffering life events and thus have higher life chaos, then interventions that increase social support through the building of secondary social ties have the potential to decrease life chaos, which could lead to engaging in less risky behavior (Thoits, 2011). Within the field of HIV prevention, behavioral interventions that use social support as a means to create attitudinal and behavioral norms that are less risky include peer empowerment and popular opinion leader models (for descriptions of these and other evidence-based interventions (see <https://effectiveinterventions.cdc.gov/>). Future research should explore how to adapt these evidence-based interventions for methamphetamine-using MSM engaging in TS.

CONCLUSION

This study contributes to the understanding of risk factors among methamphetamine-using MSM that are associated with life chaos and perceived social support, and psychosocial measures associated with TS. It is the first, to our knowledge, to address characteristics and potential motivations using quantified measures of life chaos and perceived social support. While most research focuses on individuals who engage in survival sex or who identify as male sex workers (Browne & Minichiello, 1996; Calhoun & Weaver, 1996; Estcourt et al., 2000; Joffe & Dockrell, 1995; Minichiello et al., 2000; Newman et al., 2004; Parsons et al., 2004; Weber et al., 2001; Williams et al., 2003), our sample is unique because it comprised an educated, middle-class cohort. For this reason, this population may represent

methamphetamine-using MSM who engage in casual TS rather than those who engage in formal TS for survival. Further studies should investigate motivations and behaviors of those engaging in casual TS to provide more effective intervention strategies for this population.

Acknowledgments

FUNDING

The study Internet-Based HIV Prevention for Methamphetamine-Using MSM: Formative Research (parTy) was funded by the National Institute of Mental Health, funding number 1R21MH095430. Research protocols were approved by the University of Texas Health Science Center at Houston and the University of Minnesota Institutional Review Boards.

The authors would like to thank all parTy participants. They also would like to acknowledge Jared Shenk his continuing support.

REFERENCES

- Browne J, Minichiello V. The social and work context of commercial sex between men: A research note. *Journal of Sociology*. 1996; 32(1):86–92.
- Calhoun TC, Weaver G. Rational decision-making among male street prostitutes. *Deviant Behavior*. 1996; 17(2):209–227.
- Center for Disease Control and Prevention. High-impact HIV prevention: CDCs approach to reducing HIV infections in the United States. Atlanta, GA: Center for Disease Control and Prevention; 2011.
- Chen YH, Raymond HF, Grasso M, Nguyen B, Robertson T, McFarland W. Prevalence and predictors of conscious risk behavior among San Franciscan men who have sex with men. *AIDS and Behavior*. 2013; 17(4):1338–1343. [PubMed: 22392158]
- Chew Ng RA, Samuel MC, Lo T, Bernstein KT, Aynalem G, Klausner JD, Bolan G. Sex, drugs (methamphetamines), and the Internet: increasing syphilis among men who have sex with men in California, 2004–2008. *American Journal of Public Health*. 2013; 103(8):1450–1456. [PubMed: 23153138]
- Estcourt CS, Marks C, Rohrsheim R, Johnson AM, Donovan B, Mindel A. HIV, sexually transmitted infections, and risk behaviours in male commercial sex workers in Sydney. *Sexually Transmitted Infections*. 2000; 76(4):294–298. [PubMed: 11026887]
- Friedland J, Renwick R, McColl M. Coping and social support as determinants of quality of life in HIV/AIDS. *AIDS Care*. 1996; 8(1):15–32. [PubMed: 8664366]
- Fujimoto K, Williams ML, Ross MW. Venue-based affiliation networks and HIV risk-taking behavior among male sex workers. *Sexually Transmitted Diseases*. 2013; 40(6):453–458. [PubMed: 23677019]
- Grov C, Rendina HJ, Ventuneac A, Parsons JT. HIV risk in group sexual encounters: An event-level analysis from a national online survey of MSM in the U.S. *The Journal of Sexual Medicine*. 2013; 10(9):2285–2294. [PubMed: 23809410]
- Hays RB, Chauncey S, Tobey LA. The social support networks of gay men with AIDS. *Journal of Community Psychology*. 1990; 18(4):374–385.
- Hays RB, Turner H, Coates TJ. Social support, AIDS-related symptoms, and depression among gay men. *Journal of Consulting and Clinical Psychology*. 1992; 60(3):463. [PubMed: 1619100]
- Joffe H, Dockrell JE. Safer sex: Lessons from the male sex industry. *Journal of Community & Applied Social Psychology*. 1995; 5(5):333–346.
- Kim HK, McKenry PC. Social networks and support: A comparison of african americans, asian americans, caucasians, and hispanics. *Journal of Comparative Family Studies*. 1998:313–334.
- Koken JA, Parsons JT, Severino J, Bimbi DS. Exploring commercial sex encounters in an urban community sample of gay and bisexual men: A preliminary report. *Journal of Psychology & Human Sexuality*. 2005; 17(1/2):197–213.

- Lea T, Prestage G, Mao L, Zablotska I, de Wit J, Holt M. Trends in drug use among gay and bisexual men in Sydney, Melbourne and Queensland, Australia. *Drug Alcohol Rev.* 2013; 32(1):39–46. [PubMed: 22882678]
- Lea T, Reynolds R, de Wit J. Alcohol and other drug use, club drug dependence and treatment seeking among lesbian, gay and bisexual young people in Sydney. *Drug Alcohol Rev.* 2013; 32(3):303–311. [PubMed: 23121017]
- Leserman J, Jackson ED, Petitto JM, Golden RN, Silva SG, Perkins DO, Evans DL. Progression to AIDS: The effects of stress, depressive symptoms, and social support. *Psychosomatic Medicine.* 1999; 61(3):397–406. [PubMed: 10367622]
- McCarty-Caplan D, Jantz I, Swartz J. MSM and Drug Use: A Latent Class Analysis of Drug Use and Related Sexual Risk Behaviors. *AIDS and Behavior.* 2013:1–13. [PubMed: 23054037]
- McDowell TL, Serovich J. The effect of perceived and actual social support on the mental health of HIV-positive persons. *AIDS Care.* 2007; 19(10):1223–1229. [PubMed: 18071966]
- Minichiello V, Marino R, Browne J, Jamieson M, Peterson K, Reuter B, Robinson K. A profile of the clients of male sex workers in three Australian cities. *Australian and New Zealand Journal of Public Health.* 1999; 23(5):511–518. [PubMed: 10575774]
- Mugavero MJ, Raper JL, Reif S, Whetten K, Leserman J, Thielman NM, Pence BW. Overload: Impact of incident stressful events on antiretroviral medication adherence and virologic failure in a longitudinal, multisite human immunodeficiency virus cohort study. *Psychosomatic Medicine.* 2009; 71(9):920–926. [PubMed: 19875634]
- Newman PA, Rhodes F, Weiss RE. Correlates of sex trading among drug-using men who have sex with men. *American Journal of Public Health.* 2004; 94(11)
- Parsons JT, Koken JA, Bimbi DS. The use of the internet by gay and bisexual male escorts: Sex workers as sex educators. *AIDS Care.* 2004; 16(8):1021–1035. [PubMed: 15511734]
- Reidy, WJ. HIV transmission in commercial sex venues - King County, Washington. U Washington, US: Reidy, William John; 2008. Retrieved from <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc&AN=2008-99240-362>
- Santos GM, Coffin PO, Das M, Matheson T, DeMicco E, Raiford JL, Herbst JH. Dose-response associations between number and frequency of substance use and high-risk sexual behaviors among HIV-negative substance-using men who have sex with men (SUMSM) in San Francisco. *Journal of Acquired Immune Deficiency Syndromes.* 2013; 63(4):540–544. [PubMed: 23572012]
- Smith MD, Seal DW. Motivational influences on the safer sex behavior of agency-based male sex workers. *Archives of Sexual Behavior.* 2008a; 37(5):845–853. [PubMed: 18288599]
- Smith MD, Seal D. Sexual behavior, mental health, substance use, and HIV risk among agency-based male escorts in a small US city. *International Journal of Sexual Health.* 2008b; 19(4):27–39. [PubMed: 19779600]
- StataCorp, LP. STATA-IC. College Station, TX: StataCorp LP; 2012.
- The White House Office of National AIDS Policy. National HIV/AIDS strategy for the United States: Updated to 2020. Washington, DC: 2015.
- Thoits PA. Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior.* 2011; 52(2):145–161. [PubMed: 21673143]
- Health. 19(4):27–39.
- Turner HA, Hays RB, Coates TJ. Determinants of social support among gay men: The context of AIDS. *Journal of Health and Social Behavior.* 1993:37–53. [PubMed: 8463634]
- Vosburgh HW, Mansergh G, Sullivan PS, Purcell DW. A review of the literature on event-level substance use and sexual risk behavior among men who have sex with men. *AIDS Behav.* 2012; 16(6):1394–1410. [PubMed: 22323004]
- Weber AE, Craib KJ, Chan K, Martindale S, Miller ML, Schechter MT, Hogg RS. Sex trade involvement and rates of human immunodeficiency virus positivity among young gay and bisexual men. *International Journal of Epidemiology.* 2001; 30(6):1449–1454. discussion 1455–6. [PubMed: 11821362]
- Wilkerson JM, Noor SW, Galos DL, Rosser BRS. Correlates of a single-item indicator versus a multi-item scale of outness about same-sex attraction. *Archives of Sexual Behavior.* 2015 Advance online publication.

- Wilkerson JM, Noor SW, Galos DL, Rosser BRS. Correlates of a single-item indicator versus a multi-item scale of outness about same-sex attraction. *Archives of Sexual Behavior*. 2015; 45(5):1269–1277. [PubMed: 26292840]
- Wilkerson JM, Shenk JE, Grey JA, Simon Rosser BR, Noor SW. Recruitment Strategies of Methamphetamine-Using Men Who Have Sex with Men into an Online Survey. *J Subst Use*. 2015; 20(1):33–37. [PubMed: 25642143]
- Wong MD, Sarkisian CA, Davis C, Kinsler J, Cunningham WE. The association between life chaos, health care use, and health status among HIV-infected persons. *Journal of General Internal Medicine*. 2007; 22(9):1286–1291. [PubMed: 17597350]
- Zimet GD, Dahlem NW, Zimet SG, Farley GK. The multidimensional scale of perceived social support. *Journal of Personality Assessment*. 1988; 52(1):30–41.

Associations Among Risk Factors and Engaging in Transactional Sex, Life Chaos, Social Support (N=325)

Table 1

	Engaged in TS		High Life Chaos		Low Social Support	
	n (%)	p-value	n (%)	p-value	n (%)	p-value
Race		0.086		0.025		0.131
White	37 (20.3)		93 (50.8)		105 (57.4)	
Person of Color ^a	40 (28.6)		54 (38.3)		69 (48.9)	
Ethnicity		0.056		0.001		< 0.001
Latino	20 (33.3)		16 (25.8)		19 (30.6)	
Non-Latino	57 (21.7)		132 (50.2)		156 (59.3)	
Bachelor degree		0.878		0.51		0.615
No	44 (23.5)		89 (47.1)		104 (55.0)	
Yes	33 (24.3)		59 (43.4)		71 (52.2)	
Income		0.127		0.775		0.147
\$29,999 or less	10 (23.3)		18 (40.9)		18 (40.9)	
\$30,000 – \$59,000	33 (30.8)		51 (47.2)		59 (54.6)	
\$60,000 or more	34 (20.1)		76 (44.9)		97 (57.4)	
Employment Status		0.555		0.103		0.026
Student	6 (17.1)		15 (42.9)		13 (28.9)	
Employed	65 (25.1)		125 (48.1)		150 (57.7)	
Not Employed	6 (21.4)		8 (27.6)		12 (41.4)	
Housing		0.089		0.002		0.005
Own residence	33 (19.5)		91 (53.5)		106 (62.4)	
Rent	26 (32.1)		36 (44.4)		37 (45.7)	
Impermanent ^b	18 (25.4)		21 (29.2)		31 (43.0)	
Outness		0.562		< 0.001		0.018
Out to a few/none	26 (25.2)		31 (29.8)		45 (43.3)	
Out to half	33 (25.6)		62 (48.1)		72 (55.8)	
Out to most/all	18 (19.7)		55 (59.8)		58 (63.0)	
Relationship Status		0.414		0.849		0.561
Single	20 (28.9)		30 (42.8)		37 (52.9)	

	Engaged in TS		High Life Chaos		Low Social Support	
	n (%)	p-value	n (%)	p-value	n (%)	p-value
LTR ^c with 1 person	40 (21.2)		89 (46.8)		98 (51.6)	
LTR ^c with 2+ people	14 (24.6)		26 (45.6)		34 (59.6)	
Life Chaos		0.043				<0.001
Lower	34 (19.4)		--	--	67 (37.8)	
Higher	43 (29.0)		--	--	108 (72.9)	
Social Support		0.900		<0.001		
Lower	41 (76.4)		108 (61.7)		--	--
Higher	36 (75.8)		40 (26.7)		--	--

NOTE. Bold denotes significance (p < 0.05).

^aPersons of color include non-White Latino, African American, American Indian or Alaskan Native, Asian Pacific Islander, and persons who marked "other" on the survey.

^bImpermanent housing includes persons who reported living somewhere without paying and persons who were homeless.

^cLTR = Long-term relationship.

Adjusted Associations Among Risk Factors, Engaging in Transactional Sex, Life Chaos, and Perceived Social Support

Table 2

	Engaged in TS		High Life Chaos		Low Social Support	
	aOR	95% CI	aOR	95% CI	aOR	95% CI
Housing						
Own residence	--	--	ref	ref	ref	ref
Rent	--	--	1.1	(0.60, 2.02)	0.69	(0.38, 1.27)
Impermanent	--	--	0.63	(0.32, 1.26)	1.01	(0.48, 2.16)
Employment Status						
Student	--	--	--	--	ref	ref
Employed	--	--	--	--	1.87	(0.75, 4.69)
Not employed	--	--	--	--	1.36	(0.44, 4.21)
Race						
White	--	--	ref	ref	--	--
Person of Color	--	--	0.74	(0.45, 1.22)	--	--
Ethnicity						
Latino	--	--	0.58	(0.29, 1.18)	0.48	(0.25, 0.92)
Non-Latino	--	--	ref	ref	ref	ref
Outness						
Out to a few/none	--	--	ref	ref	ref	ref
Out to half	--	--	1.80	(1.00, 3.24)	1.13	(0.63, 2.03)
Out to most/all	--	--	2.29	(1.18, 4.42)	1.22	(0.63, 2.37)
Life Chaos						
Lower	ref	ref	--	--	ref	ref
Higher	1.7	(1.01, 2.84)	--	--	3.97	(2.40, 6.57)
Social Support						
Lower	--	--	3.78	(2.31, 6.22)	--	--
Higher	--	--	ref	ref	--	--

NOTE. Because this is an exploratory study, life chaos and social support were treated as exposure and explanatory variables for the other. Bold denotes significance ($p < 0.05$).

-- Denotes the risk factor was not significant in the chi-square test ($p < 0.05$) and was not incorporated in the logistic regression model to obtain adjusted odds ratios (aOR) for each measure.

* ref: referent group