Transactional sex with regular and casual partners among young men who have sex with men in the Detroit Metro Area

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Abstract

Transactional sex refers to the commodification of the body in exchange for shelter, food, and other goods and needs. Transactional sex has been associated with negative health outcomes including HIV infection, psychological distress, and substance use and abuse. Compared to the body of research examining transactional sex among women, less is known about the prevalence and correlates of transactional sex among men. Using data from a cross-sectional survey of young men who have sex with men (YMSM; ages 18-29) living in the Detroit Metro Area (N=357; 9% HIV infected; 49% Black, 26% White, 16% Latino, 9% Other race), multivariate logistic regression analyses examined the association between transactional sex with regular and casual partners, respectively, and key psychosocial factors (e.g., race/ethnicity, education, poverty, relationship status, HIV status, prior STIs, mental health, substance use, and residential instability) previously identified in the transactional sex literature. Forty-four percent of our sample reported engaging in transactional sex. Transactional sex was associated with age, employment status, relationship status, and anxiety symptoms. When stratified, transactional sex with a regular partner was associated with age, educational attainment, employment status, relationship status, anxiety, and alcohol use. Transactional sex with a casual partner was associated with homelessness, race/ethnicity, employment status, and hard drug use. The implications of these findings for HIV/STI prevention are discussed, including the notion that efforts to address HIV/STIs among YMSM may require interventions to consider experiences of transactional sex and the psychosocial contexts that may increase its likelihood.

Keywords

The Detroit Metro Area, hereafter referred to as Detroit, is one of the most economically-strained and racially segregated areas in the U.S. (Farley, Danziger, & Holzer, 2000), and it is the state's HIV epicenter. Similar to other large cities, areas with higher HIV prevalence are more likely to be inhabited by racial/ethnic minorities and characterized by economic

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disadvantage. Consistent with national trends (U.S. Centers for Disease Control and Prevention, 2012), new HIV infections among young men who have sex with men between the ages of 13 and 29 (YMSM) are increasing in Detroit (Michigan Department of Community Health, 2014). Socially, Detroit has witnessed a severe socioeconomic decline of its metropolitan area due to the breakdown of a once booming American auto industry (Schulz, Williams, Israel, & Lempert, 2002). Alongside these economic shifts, Detroit has suffered unprecedented increases in an array of negative social risk factors (e.g., unemployment, fewer quality jobs, crime, and homelessness) (Lopez et al., 2012). These changes have forced marginalized communities to live in socioeconomically disadvantaged neighborhoods and work in high-risk, low-paying jobs and/or participate in informal (e.g., drug trade, sex work) economies (Graham et al., 2014) . Taken together, these alarming estimates are a reminder that HIV disparities by age, race/ethnicity, and sexuality are a reflection of systemic inequality.

Although the involvement of men who have sex with men (MSM) in commercial sex work has received some attention in the HIV risk literature (Mimiaga, Reisner, Tinsley, Mayer, & Safren, 2009; Minichiello, Scott, & Callander, 2013; Reisner, Mimiaga, Mayer, Tinsley, & Safren, 2008), less is known about the role of transactional sex as a survival strategy in the lives of YMSM (Oldenburg, Perez-Brumer, Reisner, & Mimiaga, 2015). Transactional sex refers to the commodification of the body in exchange for shelter, food, and other goods and needs (Higgins, Hoffman, & Dworkin, 2010; Walls & Bell, 2011). Transactional sex has been linked to numerous risk factors, including increased HIV infection and transmission, increased substance abuse, and increased mental health problems (Kalichman, Simbayi, Kaufman, Cain, & Jooste, 2007; Reisner et al., 2008; Windle, 1997). To date, research on the predictors of transactional sex involvement among male samples is relatively sparse, with most of the data available focused in non-US contexts (Baral, Sifakis, Cleghorn, & Beyrer, 2007; Beyrer et al., 2012; Dunkle et al., 2007).

Prevalence rates of men who engage in transactional sex vary considerably across studies, in part due to the conflation of commercial sex work and transactional sex in the peer-reviewed literature. Whereas commercial sex work (e.g., street workers, online escorts) is considered an occupation focused on selling sex in exchange for money (Koken, Parsons, Severino, & Bimbi, 2005; Mimiaga et al., 2009; Parsons, Koken, & Bimbi, 2004), transactional sex is conceptually different by acknowledging that the economic motivations and transactions (e.g., money, shelter, gifts or other forms of tangible support) are one of many reasons for the pursuit and maintenance of a variety of relationships and sexual encounters (Higgins et al., 2010; Walls & Bell, 2011). Researchers have noted that both commercial sex work and transactional sex are more prevalent in socioeconomically strained contexts, influence individuals' sexual agency, and increase rates of HIV/STI transmission. The conflation between socioeconomic disadvantage and HIV/STI risk behaviors has been acknowledged among MSM engaging in both commercial sex work and transactional sex (Cáceres, Aggleton, & Galea, 2008a). A study conducted in North Carolina, for example, reported that MSM were more likely to sell or purchase sex if they were older or homeless, had greater alcohol/drug consumption, experienced higher psychological distress symptoms, and engaged in increased risky sexual behaviors (Bobashev, Zule, Osilla, Kline, & Wechsberg, 2009). On the contrary, being employed and being in a romantic relationship reduced the

odds of selling or purchasing sex. In a sample of drug-using MSM recruited through street-based outreach in California, Newman and colleagues reported that sex trade was related to substance use and homelessness (Newman, Rhodes, & Weiss, 2004).

Research investigating social and contextual factors influencing transactional sex has largely overlooked relational factors; it is unclear how transactional sex manifests across different relationship typologies (e.g., regular vs. casual partners). Given the distinct power dynamics that may emerge across different sexual partnerships, it is vital that research focuses on whether the likelihood of engaging in transactional sex varies by partner type, and how the psychosocial correlates of transactional sex differ across these relationship contexts. Building on prior work by Dunkle et al. (2010), the current study included measures of lifetime prevalence of transactional sex among YMSM in two relational contexts: (1) staying in a relationship with a regular partner for more than desired due to socioeconomic reasons; and, (2) engaging in sex with a casual partner to offset socioeconomic difficulties. Given the increasing emphasis to understand and address YMSM's relationship dynamics in HIV/STI prevention and care, a more nuanced exploration of transactional sex involvement deserves further inquiry in order to parse out the risks as they relate to different sex exchange dynamics.

The current study aims to examine the prevalence and risk correlates of transactional sex in a sample of YMSM living in Detroit. Our study had three objectives. First, the prevalence of any transactional sex and its relationship to sociodemographic (e.g., age, race/ethnicity, HIV status, and residential instability) and risk factors (e.g., mental health symptoms, prior STIs, substance use) were examined. Second, the prevalence and risk correlates of transactional sex across each relationship type were assessed. Third, sociodemographic and risk correlates shared or unique across transactional sex partnerships were compared.

METHODS

Data for this paper come from a cross-sectional observational study examining the structural and psychosocial vulnerabilities experienced by YMSM in Detroit (Bauermeister et al., 2014). To be eligible for participation, recruits had to be between the ages of 18 and 29; identify as male or transgender; report currently residing in Detroit (as verified by zip code and IP address), and report ever having had sex with men.

Participants were recruited online and in-person. On the Internet, advertisements were posted on Black Gay Chat Live (BGC Live) and Facebook. In-person recruitment occurred across gay bars, clubs, and community events frequented by the target population, as well as by staff from community partner agencies, clinics, and other agencies in Detroit working with YMSM (e.g., LGBT organizations, AIDS service organizations, and community and university health clinics). Advertisements displayed brief information about the survey, a mention of a $30 VISA e-gift card incentive upon completion, and the survey's website. The survey was available in English and Spanish.

A total of 1,183 entries between May and September 2012 were recorded. Best practices to identify duplicates and falsified entries (N = 341; 28.8% of all recorded entries) were used.

This process included examining participants' online presence, email and IP addresses, operating system and browser information, irregular answer patterns, and time taken to complete survey (Bauermeister et al., 2012). Of the remaining 842 recorded screeners, 381 entries were identified as being ineligible to participate in our survey based on study criteria. The final count consisted of an analytic sample of $N = 461$ sexual minority young adults, of which 32 (6.94%) were eligible and consented but did not commence the survey (i.e., a study completion rate of 93.05%). For those questionnaires that were incomplete, participants were sent two reminder emails that encouraged them to complete the questionnaire; one email was sent a week after they had started the questionnaire and another was sent a week before the questionnaire was scheduled to close.

For this analysis, transgender participants (n=32) were excluded as there were too few observations to make reliable estimates and inferences about this population in our multivariate analyses. Of our total analytic sample, 40 participants were excluded as a result of incomplete responses in one or more of our variables of interest. The only observed sociodemographic differences between participants with missing responses and those with complete data were level of educational attainment and income. Participants with missing data exhibited lower levels of educational attainment ($m = 2.95$, $sd = 1.34$; $t_{(395)} = 2.29$, $p < .05$) than participants with complete data ($m = 3.44$, $sd = 1.31$). Participants with missing data (N = 21, 72.4%; $\chi^2_{(1)} = 8.38$, $p < .01$) exhibited a higher percentage of participants with an annual income at or below the federal poverty line compared to participants with complete data (N = 158, 44.3%).

Procedures

Web-surveying was developed using best practices (Couper, 2008), including various iterations of pilot testing prior to data collection. Study data were protected with a 128-bit SSL encryption and kept within a University of Michigan firewalled server. Upon entering the study site, participants were asked to enter a valid and private email address, which served as their username. This allowed participants to save their answers and, if unable to complete the questionnaire in one sitting, continue the questionnaire at a later time. Upon completing an eligibility screener, eligible youth were presented with a detailed consent form that explained the purpose of the study and their rights as participants and asked to acknowledge that they read and understood each section of the consent form.

Consented participants then answered a 45-60 minute questionnaire that covered assessments regarding their socio-demographic characteristics, HIV status, individual-level characteristics (i.e. sexual and substance use behaviors), perceptions and experiences with community (e.g. social networks, neighborhood, stigma, participation in minority communities), general mood over the last few months, and their hopes and dreams. Participants were compensated via e-mail upon completion of the questionnaire. A Certificate of Confidentiality was acquired from the United States Department of Health and Human Services to protect study data. Our Institutional Review Board approved all study procedures.

Measures

Transactional Sex—Participants were asked to report their lifetime engagement in transactional sex for socioeconomic means within a main/regular partnership (Dunkle, Wingood, Camp, & DiClemente, 2010). They also answered their engagement in transactional sex within a casual partnership. Engagement was measured using 4-items for both relationship types: "paying for things that I couldn't afford by myself", "having a place to live", "paying for groceries, utilities, or other bills", and "providing for someone else who depends on me for financial support". Transactional Sex variable was developed that assessed whether they had reported any transactional sex irrespective of partner type (0=No, 1=Yes). A composite sum score was created for each relationship type (range: 0-4); however, given the non-normal distribution of these variables, a lifetime dichotomous transactional sex variable was created for regular and casual partners, respectively.

Sexual Health Medical History—Participants were asked to report their current HIV status (0 = Negative; 1 = Positive; 2 = Unsure/Unknown) as well as whether they had ever been previously diagnosed with an STI (e.g., Gonorrhea, Syphilis, Chlamydia, etc.) by a health care provider (0 = No, 1 = Yes).

Depression—Items on depression were adopted from the CES-D 10, a 10-item Center for Epidemiological Studies Depression Scale (Irwin, Artin, & Oxman, 1999). All ten items were asked on a 4-point Likert scale (1 = Rarely or None; 2 = Occasionally; 3 = Some or a Little of the Time; 4 = All of the Time) and based on how the participant felt in the prior week. Positively worded items were reverse-coded and then all items were averaged. Our depression scale exhibited high reliability (Cronbach's α = .82).

Anxiety—Six items from the Brief Symptom Inventory (Derogatis & Melisaratos, 1983) were used to assess anxitey symptoms. Items were offered on a 5-point scale (1 = Never; 2 = Almost Never; 3 = Sometimes; 4 = Fairly Often, 5 = Very Often) and summed together for a composite anxiety score. This anxiety scale also yielded high reliability (Cronbach's α = .92).

Prior Mental Health Diagnoses—Participants reported on whether a doctor, psychologist, or mental health professional had ever told them they had a mental health condition (0 = No; 1 = Yes).

Substance Use—To ascertain participants' substance use, two items asked how often alcohol and marijuana were used in the past 30 days. Both items were offered on a 7-point scale (0 = 0 Times; 1 = 1-2 Times; 2 = 3-5 Times; 3 = 6-9 Times; 4 = 10-19 Times; 5 = 20-39 Times; 6 = 40+ Times). Using the same 7-point scale, we also ascertained whether participants had used the following hard drugs in the prior 30 days: powder cocaine, methamphetamine, ketamine, GHB, poppers (amyl nitrite), LSD, crack cocaine, heroin, and non-prescribed medications, including erectile dysfunction pills. Given the low prevalence for each of these hard drugs, we computed a mean frequency score across these hard drugs.

Demographic Characteristics—Participants were asked to report on standard demographic characteristics including age (in years), sexual identity, and race/ethnicity. We asked participants to indicate which of the following terms corresponded with their primary sexual identity: gay or homosexual, bisexual, straight/heterosexual, and same gender loving, MSM, or other. For the purposes of these analyses, we collapsed participants' answers into 3 categories: gay/homosexual, bisexual, or another sexual identity. Participants also indicated their race (Black/African American, White, American Indian/Alaskan Native, Asian, Native Hawaiian/Pacific Islander, and Other) and Spanish/Hispanic/Latino ethnicity. Most Latinos identified as White/European American and/or as Other, making it difficult to have sufficient cases to represent other Latino racial subgroups (e.g., Black Latino, Asian Latino, and/or Native American Latino) in our multivariate analyses. Due to small variances, race/ethnicity was collapsed to four levels (0 = Black/African/American; 1 = White/Caucasian; 2 = Latino; 3 = Other Race).

We also ascertained participants' employment status, income, housing stability, and relationship status. Participants noted their highest educational attainment (1=Less than High School; 2=High School or GED; 3=Technical/Associate Degree; 4=Some College; 5=College or graduate work). We dichotomized participants' income into above or below the federal poverty line. Residential instability was ascertained by whether or not (0=No; 1=Yes) participants had spent at least one night in the past 30 days in a shelter, public place not intended for sleeping (e.g., bus station, car, abandoned building), on the street or outside, in a temporary housing program, or in a welfare or voucher motel. Participants were also asked if they were currently in a relationship (1=Yes; 0=No).

Data Analytic Strategy

Three sets of analyses were conducted. First, study variables were examined using univariate statistics for the entire sample (N=357), followed by mean and proportion comparisons based on whether they had ever engaged in any transactional sex using t-tests and χ^2 (see Table 1). Second, prevalence estimates regarding YMSM's motivations to engage in transactional sex across partner types were computed (see Table 2). Finally, logistic regression models (see Table 3) were estimated to examine whether our psychosocial correlates were associated with the odds of engaging in transactional sex (i.e., any transactional sex; transactional sex within a main partnership; transactional sex with a casual partner). For brevity, only statistically significant findings ($p < .05$) are reported.

RESULTS

Study Sample

The analyses consisted of a predominantly gay-identified sample (N = 300, 84.0%) with small minorities of bisexual participants (N = 28, 7.8%) and participants who identified with another sexual identity (N = 29, 8.1%). Black/African American YMSM comprised the largest group in our sample (N = 174, 48.7%), followed by Non-Hispanic Whites (N = 95; 26.6%), Latinos (N = 56; 15.7%), and participants categorized in the Other Race/Ethnicity group (N = 32; 9.0%). A majority of our participants reported being HIV uninfected (N = 274, 76.8%), with smaller proportions reporting being HIV infected (N = 33, 9.2%), or

unaware of their HIV status (N = 50, 14.0%). Mean age was 23.13 years (sd = 2.86). The sample reported a mean education level above a high school degree (m = 3.44, sd = 1.31). Forty percent (N = 143) of our sample were full-time employed, 30% (N = 106) were part-time employed, and 30% reported unemployment (N=108). More than half of our sample reported being in a relationship (N = 210, 58.8%). Over half of our participants reported an annual income above the federal poverty line (N = 199, 55.7%). Sixteen percent of our sample (N = 58) reported spending at least one night homeless/transient in the past 30 days.

Any Transactional Sex

As reported in Table 1, 44% of YMSM engaged in transactional sex. YMSM who engaged in transactional sex were more likely to be a racial/ethnic minority. They were also more likely to have lower educational attainment, to be unemployed, to be residentially unstable, and report currently being in a relationship. Participants who reported transactional sex reported higher scores for depression and anxiety symptoms, respectively, and greater alcohol and marijuana use. No differences were observed across age, sexual identity, poverty, HIV status, prior STI diagnosis, prior mental health diagnosis, or hard drug use.

As shown in Table 2, forty percent of YMSM reported engaging in transactional sex with a main partner (N = 142). The most endorsed motivation for engaging in transactional sex with a main partner was being worried about paying for things that the YMSM couldn't afford by himself (82.4%), followed by being worried about where to live (70.4%), worried about paying for groceries, utilities and other bills (69.0%), and worrying about assisting someone else financially (64.8%). Twenty-six percent of YMSM reported engaging in transactional sex with a casual partner (N = 92). The most endorsed motivation for engaging in transactional sex with a casual partner was being worried about not being able to afford things (85.7%), followed by worries about paying for groceries, utilities and other bills (79.3%), being worried about a place to live (58.7%), and supporting someone else's financial well-being (53.3%). The correlation between YMSM's total number of endorsed motivations for engaging in transactional sex within a regular and casual partnership was r=.69 (p<.001).

Multivariate Analyses

Any transactional sex—A multivariate logistic regression analysis examining the odds of engaging in any transactional sex was conducted (see Table 3; $\chi^2_{(21)}$ = 90.68, p < .001; Nagelkerke R^2=30.1%). The odds of engaging in any transactional sex were associated positively with being in a relationship (p<.001), and having higher mean anxiety symptom scores (p<.05). Participants in the "Other Race" category were more likely to report transactional sex than White participants (p<.05). Unemployed participants were more likely to report transactional sex than full-time employed participants (p<.01). Greater educational attainment was negatively associated with transactional sex (p<.01).

Transactional sex within a main partnership—A multivariate logistic regression ($\chi^2_{(21)}$ = 93.11, p < .001; Nagelkerke R^2=31.1%) was used to estimate the odds of engaging in transactional sex with a regular partner (see Table 3). The results indicated that the odds of engaging in transactional sex with a regular partner increased with age (p<.05). The odds

of engaging in transactional sex within a main partnership were associated positively with being partnered currently ($p < .001$), having higher mean anxiety symptom scores ($p < .05$), and greater alcohol use ($p < .05$). Participants in the "Other Race" category were more likely to report transactional sex within a main partnership than White participants ($p < .05$). Unemployed participants were more likely to report transactional sex within a main partnership than full-time employed participants ($p < .05$). Greater educational attainment was negatively associated with transactional sex ($p < .001$).

Transactional sex with a casual partner—When the odds of engaging in transactional sex with a casual partner in our multivariate analyses were examined ($\chi^2_{(21)} = 91.51$, $p < .001$; Nagelkerke $R^2 = 33.2\%$), it was discovered that Black/African American ($p < .001$), Latino ($p < .001$), and Other Race/Ethnicity ($p < .01$) participants were all more likely to report transactional sex with a casual partner than White counterparts. Compared to full-time employed participants, part-time employed ($p < .05$) and unemployed ($p < .001$) participants exhibited greater odds of transactional sex with casual partners. Participants who reported at least one night of residential instability in the prior 30 days were at increased odds of transactional sex with a casual partner ($p < .05$). Participants who reported hard drug use were also more likely to report transactional sex with a casual partner ($p < .05$).

Discussion

Given the gender inequities present in our society, most of the research examining the prevalence and psychosocial correlates of transactional sex has focused on women, and the role of sex work and/or transactional sex among men is increasingly recognized as a public health problem (Oldenburg et al., 2015). These findings underscore the importance of examining and addressing transactional sex among men, above and beyond the assessment of sex work. In particular, it should be highlighted that over 40% of YMSM in the sample reported having engaged in transactional sex in their lifetime. This prevalence is much higher than the national 4.8% prevalence estimate reported in the National Longitudinal Study of Adolescent Health study among adolescent men who reported exchanging sex for drugs or money (Edwards, Iritani, & Hallfors, 2006). This elevated rate is alarming and underscores the need for intervention in this area.

YMSM who engaged in any transactional sex had less educational attainment and were more likely to be under-employed or unemployed. These findings emphasize the importance of considering how structural factors (e.g., low socioeconomic status and educational attainment) may foster circumstances that propel young men to engage in transactional sex as a method of gaining access to basic needs, and draw attention to the importance of examining structural factors as critical risk correlates when assessing the health and well-being of YMSM (Blankenship, Bray, & Merson, 2000; Gupta, Parkhurst, Ogden, Aggleton, & Mahal, 2008). Programs focused on identifying facilitators of, and alternative options to, transactional sex are warranted given the well-documented link between transactional sex and vulnerability to HIV and other STIs (Baral et al., 2007; Beyrer et al., 2012; Cáceres, Aggleton, & Galea, 2008b; Dunkle et al., 2007; Edwards et al., 2006; Koken et al., 2005; Mimiaga et al., 2009; Newman et al., 2004). For example, structural initiatives that include strategies to advance YMSM's economic and educational attainment (e.g., education

advancement trainings, job creation, and financial literacy) and/or help to eliminate structural and social barriers (e.g., prejudice, homophobia and stigma) that limit their access to existing socioeconomic resources should be examined as a risk reduction strategy. The development of these programs, however, will necessitate a multilevel framework that acknowledges and addresses social determinants affecting YMSM if they are to succeed.

Above and beyond the socioeconomic factors present in our sample, the current data are among the first to highlight how transactional sex and its correlates may differ by partner type among young men. Young men who reported transactional sex with a regular partner were more likely to report being in a relationship and were more likely to report greater anxiety symptoms and alcohol use. Given our definition regarding transactional sex with a regular partner (i.e., staying in a relationship with a main partner for longer than desired due to financial needs), it is plausible that the anxiety and alcohol use associations observed are indicative of YMSM's negative coping response to staying in a relationship and/or to having unmet financial needs. Future research that examines how financial strain may be influencing young men's decisions to engage in transactional sex by staying in their relationships, as well as the toll of these relationships on men's psychological well-being, is warranted. Given recent estimates suggesting that more than half of all HIV infections among MSM in the United States are attributable to a primary partner, these findings underscore the importance of addressing transactional sex, as well as mental health and substance use, in HIV/STI prevention and care programs for MSM in relationships.

YMSM who engaged in transactional sex with a casual partner were more likely to report being residentially unstable in the prior 30 days, were more likely to self-identify as a racial/ethnic minority group member, and more likely to report using hard drugs. Given the disproportionate HIV/STI burden faced by homeless (Gangamma Slesnick, Toviessi, Serovich, 2008; Kipke, Weiss, & Wong, 2007; Walls & Bell, 2011) and racial/ethnic minority YMSM in the United States (Millett, Flores, Peterson, & Bakeman, 2007; Oster et al., 2011; Sullivan et al., 2014), these findings suggest that transactional sex with a casual partner may play an important factor in understanding their vulnerability to HIV/STIs. Situated within the social context of Detroit, it is important to acknowledge that both homeless and racial/ethnic minorities, respectively, are disproportionately concentrated within the city of Detroit, as compared to more affluent cities and townships included in the metropolitan region. YMSM who engage in transactional sex with casual partners also reported higher odds of using hard drugs, mirroring prior findings from other populations (Kalichman, Simbayi, Kaufman, Cain, & Jooste, 2007; Newman, Rhodes, & Weiss, 2004; Reisner et al., 2008; Windle, 1997). Taken together, these associations with transactional sex are interpreted as being reflective of larger social factors (e.g., concentrated disadvantage and poverty within the City of Detroit) that are not modeled in our current analysis (Ayala, Bingham, Kim, Wheeler, & Millett, 2012). The current findings warrant further exploration and emphasize the importance of considering the social environment where transactional sex occurs, as well as examining how partner-level (e.g., age, race/ethnicity) and relationship-based (e.g., partner type, duration, communication) factors inform these disparities.

Our study has several limitations deserving mention. Findings from the study are based on a community sample of YMSM from the Detroit and surrounding areas; the generalization of

these findings is limited due to the employed recruitment and survey methods. The extent to which these findings apply to the larger population of YMSM in Detroit is unknown and probabilistic sampling is needed to confirm findings. The findings speak solely to the experiences of *cis*-identified YMSM. Though this focus is not necessarily a limitation, the complexity and importance of understanding the experiences of transgender populations need to be acknowledged; prior evidence suggests that transgender populations may engage in transactional sex and survival sex more frequently than other populations. The measure of transactional sex focused on lifetime; given the high prevalence observed in this sample, future research examining recent experiences of transactional sex may be warranted. Our transactional sex measure did not include an item examining whether YMSM had exchanged sex for drugs. Prior studies have noted that some MSM may exchange sex for drugs; therefore, items examining the use of transactional sex to obtain drugs should be explored in future research. Finally, the cross-sectional nature of our study limits our ability to make causal inference between transactional sex and the psychosocial factors examined in this manuscript. Given the cross-sectional design and the number of associations examined, we may have increased the propensity for Type I errors. Therefore, future research should seek to replicate our findings.

Conclusions

This study is among the first to highlight how different partnerships are related to transactional sex and, thus, potential risk factors for HIV/STI. Given the high prevalence of lifetime transactional sex reported by the current study sample, there is a need to address this area when delivering intervention content. Understanding partner type when evaluating social determinants of engagement in transactional sex emerged in our data as an important consideration. Partner type appears to be an overlooked although informative component of transactional sex and provides insight into potential motivating factors for engaging in transactional sex. Findings from this study also help us to better understand the mechanisms–in this case structural factors—by which partner types can confer risk for HIV/STI. Future studies in these areas should investigate the likely bidirectional nature of engaging in transactional sex and experiencing hardships relating to structural factors, and effective interventions for providing alternative options to transactional sex.

Acknowledgements

References

Ayala G, Bingham T, Kim J, Wheeler DP, Millett G. Modeling the impact of social discrimination and financial hardship on the sexual risk of HIV among Latino and Black men who have sex with men. American Journal of Public Health. 2012; 102(S2):e1–e8.

Baral S, Sifakis F, Cleghorn F, Beyrer C. Elevated risk for HIV infection among men who have sex with men in low- and middle-income countries 2000-2006: A systematic review. PLoS Medicine. 2007; 4:1901–1911. DOI: 10.1371/journal.pmed.0040339

Bauermeister JA, Meanley S, Hickok A, Pingel E, VanHemert W, Loveluck J. Sexuality-Related Work Discrimination and Its Association with the Health of Sexual Minority Emerging and Young Adult Men in the Detroit Metro Area. Sexuality Research and Social Policy. 2014; 11(1):1–10. DOI: 10.1007/s13178-013-0139-0 [PubMed: 24659928]

Bauermeister J, Pingel E, Zimmerman M, Couper M, Carballo-Diéguez A, Strecher V. Data Quality in web-based HIV/AIDS research: Handling Invalid and Suspicious Data. Field Methods. 2012; 24(3): 272–291. DOI: 10.1177/1525822X12443097 [PubMed: 23180978]

Beyrer C, Baral SD, Van Griensven F, Goodreau SM, Chariyalertsak S, Wirtz AL, Brookmeyer R. Global epidemiology of HIV infection in men who have sex with men. The Lancet. 2012; 380:367–377. DOI: 10.1016/S0140-6736(12)60821-6

Blankenship K, Bray S, Merson M. Structural nterventions in public health. Aids. 2000; 14(Suppl 1):S11–S21.

Bobashev GV, Zule WA, Osilla KC, Kline TL, Wechsberg WM. Transactional sex among men and women in the south at high risk for hiv and other STIs. Journal of Urban Health. 2009; 86doi: 10.1007/s11524-009-9368-1

Cáceres CF, Aggleton P, Galea JT. Sexual diversity, social inclusion and HIV/AIDS. AIDS (London, England). 2008a; 22(Suppl 2):S45–55. DOI: 10.1097/01.aids.0000327436.36161.80

Cáceres CF, Aggleton P, Galea JT. Sexual diversity, social inclusion and HIV/AIDS. AIDS (London, England). 2008b; 22(Suppl 2):S45–S55. DOI: 10.1097/01.aids.0000327436.36161.80

Couper, MP. Designing Effective Web Surveys. Cambridge University Press; New York, NY: 2008.

Derogatis LR, Melisaratos N. The Brief Symptom Inventory: an introductory report. Psychological Medicine. 1983; 13(3):595–605. [PubMed: 6622612]

Dunkle KL, Jewkes R, Nduna M, Jama N, Levin J, Sikweyiya Y, Koss MP. Transactional sex with casual and main partners among young South African men in the rural Eastern Cape: Prevalence, predictors, and associations with gender-based violence. Social Science and Medicine. 2007; 65:1235–1248. DOI: 10.1016/j.socscimed.2007.04.029 [PubMed: 17560702]

Dunkle KL, Wingood GM, Camp CM, DiClemente RJ. Economically motivated relationships and transactional sex among unmarried African American and white women: results from a U.S. national telephone survey. Public Health Reports. 2010; 125(Suppl 4):90–100. [PubMed: 20626196]

Edwards JM, Iritani BJ, Hallfors DD. Prevalence and correlates of exchanging sex for drugs or money among adolescents in the United States. Sexually Transmitted Infections. 2006; 82:354–358. DOI: 10.1136/sti.2006.020693 [PubMed: 16901917]

Farley, R., Danzinger, S., Holzer, HJ. Detroit Divided. Russell Sage Foundation; New York: 2000. The evolution of racial segregation; p. 144-177.

Gangamma Slesnick N, Toviessi O, Serovich J, R. Comparison of HIV risks among gay, lesbian, bisexual and heterosexual homeless youth. Journal of Youth & Adolescence. 2008; 37(4):456–464. [PubMed: 18607514]

Graham LF, Crissman HP, Tocco J, Hughes L. a. Snow RC, Padilla MB. Interpersonal Relationships and Social Support in Transitioning Narratives of Black Transgender Women in Detroit. International Journal of Transgenderism. 2014; 15:100–113. DOI: 10.1080/15532739.2014.937042

Gupta GR, Parkhurst JO, Ogden JA, Aggleton P, Mahal A. Structural approaches to HIV prevention. Lancet. 2008; 372(9640):764–775. doi:10.1016S0140-6736(08)60887-9. [PubMed: 18687460]

Higgins JA, Hoffman S, Dworkin SL. Rethinking gender, heterosexual men, and women's vulnerability to HIV/AIDS. American Journal of Public Health. 2010; 100(3):435–445. DOI: 10.2105/AJPH.2009.159723 [PubMed: 20075321]

Irwin M, Artin KH, Oxman MN. Screening for Depression in the Older Adult. Archives of Internal Medicine. 1999; 159(15):1701.doi: 10.1001/archinte.159.15.1701 [PubMed: 10448771]

Kalichman SC, Simbayi LC, Kaufman M, Cain D, Jooste S. Alcohol use and sexual risks for HIV/AIDS in sub-saharan Africa: Systematic review of empirical findings. Prevention Science. 2007; doi: 10.1007/s11121-006-0061-2

Kipke MD, Weiss G, Wong CF. Residential status as a risk factor for drug use and HIV risk among young men who have sex with men. AIDS and Behavior. 2007; 11(6 Suppl):56–69. DOI: 10.1007/s10461-006-9204-5 [PubMed: 17265143]

Koken JA, Parsons JT, Severino J, Bimbi DS. Exploring Commercial Sex Encounters in an Urban Community Sample of Gay and Bisexual Men. Journal of Psychology & Human Sexuality. 2005; doi: 10.1300/J056v17n01_12

Lopez WD, Graham LF, Reardon C, Reyes AM, Reyes A, Padilla M. " No jobs, more crime. More jobs, less crime" : Structural factors affecting the health of Latino men in Detroit. Journal of Men's Health. 2012; 9(4):255–260. DOI: 10.1016/j.jomh.2012.03.007

Michigan Department of Community Health. Annual HIV Surveillance Report. Michigan: 2014. 2014from http://www.michigan.gov/documents/mdch/January_2014_ALL_446611_7.pdf [Retrieved August 04, 2014]

Millett GA, Flores SA, Peterson JL, Bakeman R. Explaining disparities in HIV infection among black and white men who have sex with men: a meta-analysis of HIV risk behaviors. Aids. 2007; 21(15): 2083–2091. [PubMed: 17885299]

Mimiaga MJ, Reisner SL, Tinsley JP, Mayer KH, Safren SA. Street workers and internet escorts: Contextual and psychosocial factors surrounding HIV risk behavior among men who engage in sex work with other men. Journal of Urban Health. 2009; 86:54–66. DOI: 10.1007/s11524-008-9316-5 [PubMed: 18780186]

Minichiello V, Scott J, Callander D. New pleasures and old dangers: reinventing male sex work. Journal of Sex Research. 2013; doi: 10.1080/00224499.2012.760189

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; 94:1998–2003. DOI: 10.2105/AJPH.94.11.1998 [PubMed: 15514243]

Oldenburg CE, Perez-Brumer AG, Reisner SL, Mimiaga MJ. Transactional Sex and the HIV Epidemic Among Men Who have Sex with Men (MSM): Results From a Systematic Review and Meta-analysis. AIDS and Behavior. 2015; doi: 10.1007/s10461-015-1010-5

Oster AM, Wiegand RE, Sionean C, Miles IJ, Thomas PE, Melendez-Morales L, Millett GA. Understanding disparities in HIV infection between Black and White MSM in the United States. AIDS. 2011; 25(8):1103–1112. Retrieved from. DOI: 10.1097/QAD.0b013e3283471efa [PubMed: 21505305]

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; 16:1021–1035. DOI: 10.1080/09540120412331292405 [PubMed: 15511734]

Reisner SL, Mimiaga MJ, Mayer KH, Tinsley JP, Safren SA. Tricks of the trade: sexual health behaviors, the context of HIV risk, and potential prevention intervention strategies for male sex workers. Journal of LGBT Health Research. 2008; 4:195–209. DOI: 10.1080/15574090903114739 [PubMed: 19928046]

Schulz AJ, Williams DR, Israel BA, Lempert LB. Racial and Spatial Relations as Fundamental Determinants of Health in Detroit. The Milbank Quarterly. 2002; 80(4):677–707. Retrieved from http://www.jstor.org/stable/3350443. [PubMed: 12532644]

Sullivan PS, Peterson J, Rosenberg ES, Kelley CF, Cooper H, Vaughan A, Sanchez TH. Understanding racial HIV/STI disparities in black and white men who have sex with men: A multilevel approach. PLoS ONE. 2014; 9doi: 10.1371/journal.pone.0090514

U.S. Centers for Disease Control and Prevention. Estimated HIV Incidence in the United States, 2007–2010. HIV Surveillance Supplemental Report. 2012; 17(4) Retrieved from http://www.cdc.gov/hiv/pdf/statistics_hssr_vol_17_no_4.pdf.

Walls NE, Bell S. Correlates of engaging in survival sex among homeless youth and young adults. Journal of Sex Research. 2011; 48(5):423–36. DOI: 10.1080/00224499.2010.501916 [PubMed: 20799134]

Windle M. The trading of sex for money or drugs, sexually transmitted diseases (STDs), and HIV-related risk behaviors among multisubstance using alcoholic inpatients. Drug and Alcohol Dependence. 1997; 49:33–38. DOI: 10.1016/S0376-8716(97)00136-1 [PubMed: 9476697]

Table 1

Descriptive Statistics by Transactional Sex, N = 357

Variable	Full Sample N=357	No Transactional Sex N = 201	Any Transactional Sex N = 156	t/χ^2
Age, M (SD)	23.13 (2.86)	22.99 (2.81)	23.32 (2.91)	−1.10
Race/Ethnicity, N (%)				8.25[*]
Black/African American	174 (48.7)	93 (46.3)	81 (51.9)	
White	95 (26.6)	65 (32.3)	30 (19.2)	
Latino	56 (15.7)	27 (13.4)	29 (18.6)	
Other Race/Ethnicity	32 (9.0)	16 (8.0)	16 (10.3)	
Sexual Identity, N (%)				2.22
Gay/Homosexual	300 (84.0)	174 (86.6)	126 (80.8)	
Bisexual	28 (7.8)	13 (6.5)	15 (9.6)	
Other Sexual Identity	29 (8.1)	14 (3.9)	15 (9.6)	
Education Level, M (SD)	3.44 (1.31)	3.67 (1.25)	3.15 (1.33)	3.76[***]
Employment Status				12.35[**]
Full-Time	143 (40.0)	94 (46.8)	49 (31.4)	
Part-Time	106 (29.7)	60 (29.9)	46 (29.5)	
Unemployed	108 (30.3)	47 (23.4)	61 (39.1)	
Living in Poverty, N (%)				.72
At or Below Poverty Line	158 (44.3)	85 (42.3)	73 (46.8)	
Above Poverty Line	199 (55.7)	116 (57.7)	83 (53.2)	
Residentially Unstable, N (%)				5.57[*]
No	298 (83.5)	176 (87.6)	122 (78.2)	
Yes	59 (16.5)	25 (12.4)	34 (21.8)	
In a Relationship, N (%)				10.25[***]
No	210 (58.8)	133 (66.2)	77 (49.4)	
Yes	147 (41.2)	68 (33.8)	79 (50.6)	
HIV Status, N (%)				1.48
Negative	274 (76.8)	154 (76.6)	120 (76.9)	
Positive	33 (9.2)	16 (8.0)	17 (10.9)	
Unknown	50 (14.0)	31 (15.4)	19 (12.2)	
Prior STI Diagnosis, N (%)				1.77
No	286 (80.1)	166 (82.6)	120 (76.9)	
Yes	71 (19.9)	35 (17.4)	36 (23.1)	
Depression, M (SD)	1.95 (.58)	1.82 (.55)	2.11 (.57)	−4.89[***]
Anxiety, M (SD)	1.75 (.92)	1.55 (.75)	2.01 (1.05)	−4.84[***]
Prior Mental Health Diagnosis, N (%)				2.86
Yes	328 (91.9)	189 (94.0)	139 (89.1)	
No	29 (8.1)	12 (6.0)	17 (10.9)	

Variable	Full Sample N=357	No Transactional Sex N = 201	Any Transactional Sex N = 156	t/χ^2
Alcohol Use, M (SD)	2.41 (1.60)	2.20 (1.49)	2.67 (1.69)	−2.78 **
Marijuana Use, M (SD)	1.49 (2.07)	1.09 (1.76)	2.00 (2.33)	−4.05 ***
Hard Drug Use, M (SD)	.08 (.31)	.05 (.25)	.11 (.37)	−1.65

*
Note: $p < .05$,

**
$p < .01$,

***
$p < .001$

Table 2

Prevalence of transactional sex motivations by relationship type among YMSM who engaged in transaction sex, N = 156

	I have stayed with a main partner longer than I wanted to because … (N, %)	I have had sex with someone who was not a regular partner because … (N, %)
I was worried about paying for things I couldn't afford by myself.	117 (82.4)	79 (85.7)
I was worried about having a place to live.	100 (70.4)	54 (58.7)
I was worried about paying for groceries, utilities, or other bills.	98 (69.0)	73 (79.3)
I was worried about my ability to provide for someone else who depends on me for financial support.	92 (64.8)	49 (53.3)
Cumulative Number of Items Endorsed, N(%)		
0	215 (60.2)	265 (74.2)
1	31 (8.7)	21 (5.9)
2	20 (5.6)	19 (5.3)
3	28 (7.8)	8 (2.2)
4	63 (17.6)	44 (12.3)

Notes. Columns percentages are computed based on the number of YMSM who engaged in transactional sex in each relationship type (main partner: N=142; casual partner: N=92).

Table 3

Multivariate Logistic Regression of Transactional Sex by Partner Type, N = 357

	Any Transactional Sex		Transactional Sex with Regular Partner		Transactional Sex with Casual Partner	
	AOR	95% CI	AOR	95% CI	AOR	95% CI
Age	1.09	.99-1.20	1.13[*]	1.02-1.24	1.05	.94-1.16
Race/Ethnicity[1]						
Black/African American	1.53	.81-2.91	1.72	.89-3.33	5.91[***]	2.31-15.11
Latino	1.94	.87-4.35	1.92	.85-4.36	7.23[***]	2.51-20.81
Other Race/Ethnicity	2.77[*]	1.02-7.5	3.12[*]	1.12-8.75	5.06[**]	1.45-17.67
Sexual Identity[2]						
Bisexual	1.29	.51-3.24	1.31	.51-3.33	1.66	.65-4.20
Other Sexual Identity	.87	.36-2.15	.65	.26-1.64	1.26	.49-3.28
Educational Attainment	.71[**]	.56-.89	.67[***]	.53-.85	.92	.71-1.18
Employment Status[3]						
Part-Time	1.62	.86-3.07	1.89	.99-3.64	2.28[*]	1.06-4.90
Unemployed	2.61[**]	1.56-5.42	2.49[*]	1.18-5.23	4.77[***]	2.03-11.23
Living in Poverty[4]	.83	.45-1.56	.78	.41-1.48	.611	.30-1.26
Residentially Unstable[5]	1.34	.68-2.65	1.42	.71-2.83	2.10[*]	1.03-4.28
In a Relationship[6]	2.34[***]	1.41-3.90	2.34[***]	1.40-3.91	1.54	.86-2.76
HIV Status[7]						
Positive	.58	.24-1.39	.44	.18-1.09	1.01	.40-2.58
Unknown	.58	.27-1.24	.63	.29-1.39	.87	.35-2.13
Prior STI Diagnosis[8]	1.56	.65-2.41	1.25	.65-2.39	.70	.33-1.49
Depression Symptoms	1.62	.93-2.81	1.32	.76-2.31	1.35	.72-2.52
Anxiety Symptoms	1.49[*]	1.04-2.15	1.47[*]	1.02-2.12	1.40	.95-2.07
Prior Mental Health Diagnosis	1.81	.71-4.60	2.51	.98-6.43	2.15	.78-5.93
Alcohol Use	1.17	.98-1.40	1.25[*]	1.04-1.51	1.17	.95-1.44
Marijuana Use	1.11	.97-1.27	1.12	.97-1.28	1.07	.92-1.25

	Any Transactional Sex		Transactional Sex with Regular Partner		Transactional Sex with Casual Partner	
	AOR	95% CI	AOR	95% CI	AOR	95% CI
Hard Drug Use	1.48	.57-3.86	1.55	.58-4.15	2.78[*]	1.03-7.55

*
Notes. p .05,

**
p .01,

***
p .001.

[1] White participants serve as referent group;

[2] Gay-identified participants serve as referent group;

[3] Full-time workers serve as referent group;

[4] Living above poverty line serve as referent group;

[5] Participants who did not experience residential instability in the prior 30 days serve as referent group;

[6] Single participants serve as referent group;

[7] HIV-negative participants serve as the referent group;

[8] YMSM who have never had a diagnosed STI serve as referent group.