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Men Who Report Recent Male and Female Sex Partners in Cape Town, South Africa: An Understudied and Underserved Population

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Abstract The HIV/AIDS epidemic in South Africa has largely focused on the needs of heterosexual men and women. However, little is known about the sexual risk histories of men who have sex with both men and women (MSMW). Furthermore, we know very little about the psychosocial health needs or of the possibility of a syndemic (numerous interrelated epidemics) among MSMW. We surveyed 1,203 men attending drinking establishments in a township located in Cape Town, South Africa. We compared the behaviors and experiences of MSMW to men reporting only having sex with women (MSW). Twelve percent of the sample reported having sex with both men and women in the past 4 months. MSMW were twice as likely as MSW to report being HIV positive (10.5 vs. 4.6 %). MSW were more likely to be married than MSMW but reported similar numbers of female sex partners. MSMW were more likely to report a history of childhood sexual abuse, recent experienced and perpetrated physical and sexual partner violence, both receiving and giving sex for money, drugs, or shelter, and a recent STI. These factors were found to be interrelated among MSW but not MSMW. Although MSMW demonstrate considerable risk taking and report higher rates of HIV infection than MSW, their needs are largely unmet and underemphasized. Findings suggest the need to better understand factors contributing to sexual risk taking among MSMW. HIV prevention interventions should consider psychosocial health problems unique to MSMW residing in South African townships.

Introduction

Efforts to end the HIV/AIDS epidemic in South Africa have generally focused on addressing the needs of heterosexual men and women. This approach has overlooked the psychosocial health needs of gay and bisexual men. As presented in South Africa's HIV/AIDS and STI Strategic Plan (Rispel & Metcalf, 2009; SANAC, 2007), efforts have concentrated on prevention among heterosexual men and women, mother-to-child transmission, and health care workers (Burrell, Mark, Grant, Wood, & Bekker, 2010; Lane et al., 2011; Rispel, Metcalf, Cloete, Reddy, & Lombard, 2011). This framework for understanding the generalized HIV/AIDS epidemic in South Africa has led to prioritizing prevention efforts that overlook the needs of men who have sex with both men and women (MSMW) (Smith, Tapsoba, Peshu, Sanders, & Jaffe, 2009; van Griensven, de Lind van Wijngaarden, Baral, & Grulich, 2009). As such, in South Africa, there is a lack of information regarding basic data on MSMW, including the prevalence of MSMW and how their HIV transmission risk behaviors and sexual risk histories compare to men who only report female partners (MSW). Given the high HIV prevalence among men who report male sex partners (Bengtsson & Thorson, 2010; Beyrer et al., 2012; Chapman et al., 2011; Gebreyesus & Mariam, 2009; Geibel, Tun, Tapsoba, & Kellerman,

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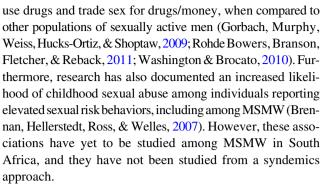e-mail: lisaanne.eaton@gmail.com

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2010; Lane, Shade, McIntyre, & Morin, 2008; Merrigan et al., 2011) in sub-Saharan Africa, it is likely that HIV prevalence is elevated among MSMW as well. Although little is known about MSMW, they are likely a critical population to intervene with as they bridge HIV epidemics between gay men and heterosexual women. However, the majority of available research on MSMW has been conducted in developed countries (Hightow et al., 2006; Lyons et al., 2012; Malebranche, Arriola, Jenkins, Dauria, & Patel, 2010; Mercer, Hart, Johnson, & Cassell, 2009; Operario, Smith, Arnold, & Kegeles, 2011; Parsons, Grov, & Golub, 2012; Siegel, Schrimshaw, Lekas, & Parsons, 2008; Weatherburn, Hickson, Reid, Davies, & Crosier, 1998; Wolitski & Fenton, 2011) with limited data on MSMW within Africa (Beyrer et al., 2010; Raymond et al., 2009; Wold et al., 1998).

Some studies investigating the psychosocial needs of men and women at risk for HIV suggest the presence of a syndemic or numerous interconnected epidemics operating together to fuel the HIV/AIDS epidemic (Gonzalez-Guarda, Florom-Smith, & Thomas, 2011a; Meyer, Springer, & Altice, 2011; Singer, 2009). This theoretical perspective holds that in the presence of multiple health afflictions, negative outcomes are exacerbated, and in order to effectively reverse these outcomes the multiple epidemics need to be addressed. The syndemic framework has been applied to understanding HIV risk among marginalized groups including urban men who have sex with men (MSM) (Mustanski, Garofalo, Herrick, & Donenberg, 2007; Parsons et al., 2012; Stall et al., 2003), Latinas (Gonzalez-Guarda, McCabe, Florom-Smith, Cianelli, & Peragallo, 2011b), Hispanics (Gonzalez-Guarda et al., 2011a) and women (Meyer et al., 2011). In this research there is consistent evidence that co-occurring psychosocial health problems, like childhood sexual abuse, depression, and substance use, compound the risk of HIV transmission. For example, recently Parsons, Grov, and Golub (2012) have shown that, among MSM in New York City, experiencing sexual compulsivity, depression, childhood sexual abuse, intimate partner violence, and drug use have an additive effect on contracting HIV and engaging in high-risk sexual behavior.

There is limited research on the psychosocial health needs of MSMW (King et al., 2008; McLaughlin, Hatzenbuehler, & Keyes, 2010; Parsons et al., 2012) Much of the available literature on MSMW is limited to sub-analyses of small samples of MSM who also report female partners. However, consistent with what is known of syndemics theory, sexual risk taking among MSMW in samples outside of Africa has shown that these men tend to engage in higher risk taking. For example, they report more anal sex partners, higher rates of unprotected sex acts and are more likely to test HIV positive than MSW (Zule, Bobashev, Wechsberg, Costenbader, & Coomes, 2009). MSMW also demonstrate lifetime sexual risk histories that include higher frequencies of unprotected anal intercourse, and a greater likelihood of reporting sex partners who

use drugs and trade sex for drugs/money, when compared to other populations of sexually active men (Gorbach, Murphy, Weiss, Hucks-Ortiz, & Shoptaw, 2009; Rohde Bowers, Branson, Fletcher, & Reback, 2011; Washington & Brocato, 2010). Furthermore, research has also documented an increased likelihood of childhood sexual abuse among individuals reporting elevated sexual risk behaviors, including among MSMW (Brennan, Hellerstedt, Ross, & Welles, 2007). However, these associations have yet to be studied among MSMW in South Africa, and they have not been studied from a syndemics approach.

For the current study, we used cross-sectional surveys to assess sexual risk taking and sexual risk histories among men attending informal drinking establishments or *shebeens* and taverns in Cape Town, South Africa. The aim of the current study was to analyze sexual, substance using, and violence risk histories-syndemics-among MSW and MSMW. We hypothesized that partner violence, forced sex, childhood sexual and physical abuse, substance abuse, and sexual risk taking would be elevated among MSMW relative to MSW and that these psychosocial health factors would be associated with each other among both MSMW and MSW. To our knowledge, this is the first study to examine the psychosocial needs of MSMW living in South African townships and the first study to investigate for the presence of a syndemic among these men.

Method

Participants

Participants were men and women attending shebeens in a peri-urban township in Cape Town, South Africa. However, in order to analyze the behaviors of MSMW relative to MSW, only surveys from men were included in the current report. The township is located within 20 km of Cape Town's central business district and consists of both people of mixed race (i.e., Coloureds) and Black Africans. A relatively new township, the community was established in 1990 and is one of the first townships in South Africa to racially integrate. Large numbers of indigenous Black Africans started settling in and around the township during the 1990s after government policies of racial segregation during Apartheid ended. The township sampled for this study, therefore, offers the opportunity to survey men of varying cultures residing within one South African community. All men present at the shebeens were eligible to participate in the study and, therefore, no screening exclusions were made based on sexual behaviors.

Using an adaptation of the Priorities for Local AIDS Control Efforts (PLACE) community mapping methodology (Weir et al., 2003), we located and defined alcohol serving establishments in the township for the current study. Alcohol serving venues were systematically identified by approaching

a total of 210 members of the community at public places such as bus stands and markets, and asking them to identify places where people go to drink alcohol. Venues were eligible if they had space for patrons to sit and drink, reported >50 unique patrons per week, had >10 % female patrons, and were willing to have a research team visit over the course of a year.

Procedure

Anonymous surveys were collected between October 2009 and April 2011 from patrons at a total of 10 alcohol-serving venues. Individuals inside the venue were approached by field workers to complete a self-administered 9-page survey questionnaire, which took, on average, 10–15 min to complete. Research evaluating survey administration styles has identified self-administration as an appropriate and effective data collection method with good reliability and acceptability (Cook et al., 1993; Puhan, Ahuja, Van Natta, Ackatz, & Meinert, 2011). Black African field workers spoke Xhosa and English, and Coloured field workers spoke Afrikaans and English. Surveys were administered in participants' preferred language. Participants were given a small token of appreciation for completing surveys, such as a keychain or coffee mug. Surveys were repeated four times over a 1-year period. A total of 3,642 individuals were approached to participate and 3,350 (92 %) agreed. Surveys were data scanned and manual checks were completed to identify errors. All study procedures were approved by the ethical review boards in the U.S. and in South Africa.

Participants were approached at 10 different shebeens and 3,350 agreed to fill out a survey assessment. Of these participants, 718 (21.4 %) had previously filled out a survey on a prior occasion (information based on question included in survey), and 1,185 (35.4 %) surveys were completed by women. Duplicate surveys (first completed survey was retained) and surveys from women were removed. Of the remaining participants, 20 (<.01 %) reported only having sex with men (MSM) and 224 (7.1 %) reported no sex partners or behaviors. These surveys were removed, leaving 1,203 male participants (MSW = 1,060 and MSMW = 143) in all further analyses. The small number of MSM precluded data analyses focusing specifically on these men.

Measures

Measures were adapted from previous research conducted in South Africa (Kalichman, Cain, Eaton, Jooste, & Simbayi, 2011a; Kalichman, Pinkerton et al., 2011b; Pitpitan et al., 2012; Scott-Sheldon et al., 2011; Sikkema et al., 2011) and were administered in the three languages spoken throughout the township: English, Xhosa, and Afrikaans. All of the measures were translated and back-translated to produce parallel forms.

Demographics

Participants were asked to report gender, age, education, ethnicity, employment, marriage, and whether their house had electricity and running water.

HIV Testing and Status and STI Diagnosis

Participants were asked to report if they had ever tested for HIV and their HIV status. HIV status was dichotomized between those who reported being HIV positive and those who reported being HIV negative/unknown. Participants were asked to report on whether they had been diagnosed with a sexually transmitted infection (STI) in the past 4 months.

Drug and Alcohol Use

Participants were asked to report whether they used the following drugs in the past 4 months: "marijuana (dagga)," "glue, petrol or sprits," "tik (methamphetamine)," and "injected a drug with a needle." Responses were coded into two categories: reporting any drug use or not. Alcohol use was assessed using two measures each capturing unique components of alcohol intake (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993). For alcohol frequency, participants were asked to report how often they have a drink containing alcohol. Responses ranged from never to more than 4 times a week. For alcohol consumption, participants reported how many drinks containing alcohol they had on a typical day when they were drinking. Responses ranged from "I don't drink" to 10 or more.

Physical and Sexual Abuse

Participants were asked to report if they had ever been hit by a sex partner (experienced violence), if they had ever hit a sex partner (perpetrated violence), if they had ever been forced to have sex, and if they had ever forced someone to have sex. These four items were each repeated except were framed within in the past 4 months. Participants were asked if they had exchanged money, alcohol, drugs, or a place to stay for sex, or exchanged sex for money, drugs, or a place to stay in the past 4 months. Participants were also asked whether they had experienced physical abuse as a child by a parent or guardian and whether they had experienced sexual abuse as a child. For each of these questions, participants gave a dichotomous yes/no response.

Sex Partners and Behaviors

Participants were asked about the number of male and female sex partners they had in the past 4 months. For sex behav-

iors, participants reported the number of unprotected and protected sex acts they had in the past 4 months (Napper, Fisher, Reynolds, & Johnson, 2010). The sex behavior questions did not specify if the sex act was with a male or female partner. A percent protected variable was calculated based on the number of condom protected sex acts divided by the total number of sex acts. Participants reporting no unprotected sex acts were coded as 100 % protected.

Data Analyses

We conducted descriptive analyses for sample demographic characteristics, lifetime physical and sexual risk histories, recent physical and sexual risk histories, and sex partners and behaviors. Chi square analyses for categorical variables and risk ratios for continuous variables were conducted to assess similarities and differences between MSW and MSMW. Next, we used generalized linear modeling (GZLM) to examine potential differences between MSW and MSMW on variables that were significant in univariate models. This multivariate model allowed us to identify variables uniquely associated with MSMW/MSW while controlling for all relevant variables from univariate analyses. Due to our outcome variable being dichotomous (MSW or MSMW), we specified a binary logistic model. Results for this model are reported in odds ratios (OR). For our tests of bivariate associations among psychosocial health factors, we used a binary logistic model. There were less than 5 % missing data for any given variable. For all analyses, we used $p < .05$ to define statistical significance. PASW Statistics version 18.0 (SPSS Inc., Chicago, IL) was used for all analyses.

Results

For demographic variables, MSW and MSMW reported similar levels of education with most participants reporting 12 years of schooling. MSW were significantly older and more likely to be married; however, there were no significant differences in ethnicity, employment, or housing between groups (see Table 1).

MSW and MSMW reported similar likelihoods of ever having been tested for HIV (63 %) and MSMW were twice as likely to report HIV positive status compared to MSW (see Table 2). MSMW were significantly more likely than MSW to report having been diagnosed with an STI. Drug and alcohol use were similar for both groups. One in four men reported recent drug use and half of the sample reported high rates of alcohol use.

In regards to lifetime sexual risk histories, MSW and MSMW reported similar experiences of having ever been hit by a sex partner, hitting a sex partner, having been forced to have sex, and childhood physical abuse with around a quarter to a third of the sample on the whole reporting these experiences. MSMW were significantly more likely to report having forced someone to have sex and that as a child they had experienced sexual abuse. For recent sexual risk histories, MSMW were more likely to have hit a sex partner, been hit by a sex partner, and to have forced someone to have sex in the past 4 months. Similarly, MSMW were significantly more likely to report exchanging sex for money, goods, or a place to stay and to report exchanging money, goods, or a place to stay in exchange for sex than MSW in the past 4 months (see Table 3).

No significant differences were observed in regards to the numbers of female sex partners, unprotected vaginal/anal sex acts, protected vaginal/anal sex acts, and percent protected

Table 1 Demographic characteristics among MSW and MSMW

	MSW ($n = 1,060$)		MSMW ($n = 143$)		
	M	SD	M	SD	t
Age	30.92	9.37	28.51	8.28	3.21**
Education	2.67[a]	.92	2.69	.96	<1
	n	%	n	%	χ^2
Ethnicity					
Black	705	67.1	102	73.9	2.61
Coloured	346	32.9	36	26.1	
Employed					
Yes	663	62.6	79	55.6	2.58
Married					
Yes	236	22.4	18	12.8	6.88**
House has electricity?					
Yes	988	93.6	133	93.7	<1
House has indoor water?					
Yes	939	88.9	120	84.5	2.38

[a] Means correspond to approximately 12 years of schooling

*** $p < .001$, ** $p < .01$, * $p < .05$

Table 2 HIV/STI status and substance use among MSW and MSMW

	MSW (n = 1,060)		MSMW (n = 143)		
	n	*%*	*n*	*%*	χ²
Ever HIV tested?					
Yes	677	64.4	89	62.7	<1
HIV status					
Positive	47	4.6	14	9.9	7.14**
Negative/unknown	978	95.4	127	90.1	
Have you been diagnosed with an STI in the past 4 months?					
Yes	57	5.4	19	13.4	13.28***
Drug use in past 4 months					
Yes	258	24.4	38	27.0	<1
Alcohol frequency					
How often do you have a drink containing alcohol?					
≥2–3 times a week	518	49.1	67	47.2	
<2–3 times a week	537	50.9	75	52.8	1.32
Alcohol consumption					
How many drinks containing alcohol do you have on a typical day when you are drinking?					
≥5	551	52.2	71	49.7	
<5	501	47.8	72	50.3	1.57

*** *p* < .001, ** *p* < .01, * *p* < .05

Table 3 Lifetime and recent sexual risk histories among MSW and MSMW

	MSW (n = 1,060)		MSMW (n = 143)		χ²
	n	*%*	*n*	*%*	
Has a sex partner ever hit you?					
Yes	222	21.1	37	26.1	1.82
Have you ever hit a sex partner?					
Yes	294	29.8	50	37.3	3.17
Has someone ever forced you to have sex when you didn't want to?					
Yes	212	20.2	36	25.4	2.06
Have you ever forced someone to have sex when they didn't want to?					
Yes	168	16.0	32	22.7	4.03*
In the past 4 months, has a sex partner hit you?					
Yes	90	8.6	24	16.9	10.06***
In the past 4 months, have you hit a sex partner?					
Yes	127	12.1	33	23.1	13.19***
In the past 4 months, has someone forced you to have sex when you didn't want to?					
Yes	117	11.1	23	16.2	3.10
In the past 4 months, have you forced someone to have sex when they didn't want to?					
Yes	102	9.7	25	17.6	8.24**
In the past 4 months, has someone given you money, alcohol, drugs, or a place to stay in exchange for sex?					
Yes	86	8.2	25	17.6	13.23***
In the past 4 months, have you given anyone money, drugs, or a place to stay in exchange for sex?					
Yes	96	9.1	26	18.2	11.30**
As a child were you ever badly beaten by your parents or the people who raised you?					
Yes	220	20.9	36	25.7	1.72
As a child, were you ever sexually abused (that is, forced to have some kind of sexual contact, like touching, oral sex or intercourse)?					
Yes	74	7.0	26	18.3	20.81***

*** *p* < .001, ** *p* < .01, * *p* < .05

acts reported by MSMW and MSW in the past 4 months. Both groups reported around 2.5 female sex partners and around 5 unprotected sex acts on average in the past 4 months. Similarly, MSMW reported around 3.5 male sex partners in the past 4 months (see Table 4).

Using a multivariate binary logistic model, we identified factors that were uniquely associated with MSW or MSMW behaviors and experiences in the past 4 months (see Table 5). This model included all significant variables from bivariate

analyses. For this model, HIV status and sexual abuse as a child emerged as being significantly associated with MSMW behaviors, controlling for other factors in the model, with HIV positive status (OR = 2.00; 95 % CI = 1.02–4.00) and experiencing childhood sexual abuse (OR = 2.17; 95 % CI = 1.19–3.85) were associated with higher odds of being MSMW.

Using logistic regressions we examined the bivariate associations between numerous psychosocial health factors including recent partner violence, recent forced sex, childhood

Table 4 Number and percentage of male and female sex partners, and protected and unprotected sex acts among MSW and MSMW

In the past 4 months	MSW (n = 1,060)		MSMW (n = 143)		OR (95 % CI)
	M	SD	M	SD	
Number of female sex partners	2.62	3.49	2.54	3.98	1.01 (.99–1.03)
Percent reporting at least					
Two female sex partners	44.2 %		41.3 %		
Five female sex partners	12.8 %		11.2 %		
Number of male sex partners	0	0	3.42	7.01	n/a
Percent reporting at least					
Two male sex partners	0 %		46.9 %		
Five male sex partners	0 %		15.4 %		
Number of unprotected sex acts	6.30	15.51	5.20	14.49	1.00 (.98–1.01)
Percent reporting at least					
Two unprotected sex acts	44.9 %		51 %		
Five unprotected sex acts	25.5 %		26.6 %		
Number of protected sex acts	4.95	8.39	4.97	7.80	1.00 (.98–1.02)
Percent reporting at least					
Two unprotected sex acts	51.5 %		63.6 %		
Five unprotected sex acts	31.3 %		35.8 %		
Percent of sex acts protected	63	41	61	36	.90 (.59–1.40)

*** p < .001, ** p < .01, * p < .05

Table 5 Multivariate logistic model identifying unique variables associated with MSMW/MSW

	MSMW = 0 MSW = 1			Model fit χ²
	OR	95 % CI	p	
Age	1.02	.99, 1.43	ns	40.19***
Married	.63	.36, 1.13	ns	
HIV status	.50	.25, .98	<.05	
Have you ever forced someone to have sex when they didn't want to?	.99	.57, 1.72	ns	
As a child, were you ever sexually abused (that is, forced to have some kind of sexual contact, like touching, oral sex or intercourse)?	.46	.26, .84	<.001	
In the past 4 months,				
Have you been diagnosed with an STD?	.63	.33, 1.21	ns	
Has a sex partner hit you?	.85	.46, 1.26	ns	
Have you hit a sex partner?	.67	.38, 1.18	ns	
Have you forced someone to have sex when they didn't want to?	1.33	.66, 2.67	ns	
Has someone given you money, alcohol, drugs, or a place to stay in exchange for sex?	.69	.38, 1.27	ns	
Have you given anyone money, drugs, or a place to stay in exchange for sex?	.86	.46, 1.60	ns	

*** p < .001

Table 6 Bivariate associations among partner violence, forced sex, childhood abuse, drug use, alcohol use, and high risk sex behaviors among MSW and MSMW

	Recent partner violence	Recent forced sex	Childhood abuse	Drug Use	Alcohol Use	High Risk Sex
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Recent partner violence[a]	MSMW ⟶ MSW ↓	8.82 (3.77-20.63)***	7.34 (3.32-16.25)***	1.84 (.84-4.02)	1.25 (.60-2.62)	2.48 (1.13-5.46)*
Recent forced sex[b]	12.1 (7.97-18.38)***	MSMW ⟶ MSW ↓	6.93 (3.06-15.72)***	1.44 (.64-3.27)	.77 (.35-1.70)	1.63 (.74-3.57)
Childhood abuse[c]	3.58 (2.53-5.06)***	5.30 (3.77-7.47)***	MSMW ⟶ MSW ↓	.79 (.36-1.74)	.73 (.35-1.51)	1.76 (.87-3.61)
Drug Use[d]	2.25 (1.59-3.20)***	2.24 (1.59-3.16)***	1.69 (1.24-2.31)**	MSMW ⟶ MSW ↓	1.62 (.76-3.46)	1.98 (.90-4.42)†
Alcohol Use[e]	1.44 (1.03-2.02)*	1.77 (1.28-2.46)**	1.36 (1.02-1.81)*	1.19 (.89-1.58)	MSMW ⟶ MSW ↓	1.21 (.60-2.44)
High Risk Sex[f]	2.17 (1.54-3.07)***	2.77 (1.99-3.87)***	1.51 (1.11-2.04)**	1.93 (1.43-2.60)***	1.58 (1.21-2.08)**	

*** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$

[a] Experiencing or perpetrating partner violence in the past 4 months

[b] Experiencing or perpetrating forced sex in the past 4 months

[c] Experiencing childhood physical or sexual abuse

[d] Reporting any drug use

[e] Alcohol use was dichotomized by using a median split

[f] Reporting more than two sex partners *and* unprotected sex was considered as engaging in high risk sex

sexual abuse, drug use, alcohol use and high risk sex behavior (Table 6). We examined these relationships separately for both MSW and MSMW. Among MSW, all psychosocial health factors were significantly related to each other with the exception of alcohol use and drug use. Alcohol use and drug use were positively associated, yet the relationship failed to reach significance. Among MSMW, we found significant relationships between recent partner violence, recent forced sex, and childhood abuse. However, there was no relationship between drug use and any other factors, or alcohol use and any other factors. Likewise, high risk sexual behavior was only found to be associated with recent partner violence.

Discussion

Our study was among the first to shed light on an existing HIV epidemic, outside of heterosexual transmission, among individuals living in a South African township. MSMW were more than twice as likely to report an HIV positive status compared to MSW. Furthermore, MSMW comprised a small but significant number of sexually active men attending shebeens, making up 12 % of this subpopulation. Therefore, MSMW likely play a critical role in understanding how HIV has been transmitted through various sexual networks. However, more research is needed to understand how sexual risk taking varies among MSMW and MSW.

Our findings were consistent with other studies that demonstrated that MSMW experience a relatively higher frequency of negative health outcomes than MSW. Specifically, these men reported sexual and physical violence at elevated rates, i.e., compared to MSW, MSMW reported higher rates of recent episodes of partner violence, perpetrated forced sex, transactional sex, and childhood sexual abuse, which suggests that these men should be targeted in prevention efforts that include addressing needs relating to mental health and partner violence. However, our research diverged from prior findings regarding syndemics in that, among MSMW, we did not observe overwhelming evidence for the presence of a syndemic. Although psychosocial factors relating to violence were associated with each other, substance use was not associated with other psychosocial health factors. For high risk sex, we did observe a relationship between it and recent partner violence, yet not with other factors. Therefore, although many MSMW reported having multiple, recent, male and female sex partners and their percent of unprotected sex acts was elevated, we cannot conclude that these findings were related to the presence of multiple, co-occurring psychosocial health factors. However, among MSW, we observed significant associations across psychosocial health factors, demonstrating that these factors likely contribute to a syndemic.

It is unclear why the relationships between psychosocial factors varied between MSMW and MSW. It is possible that

other factors more closely related to the experiences of having same sex partners play a stronger role in contributing to high risk sex than those observed. For example sexual orientation discrimination (King et al., 2008; McCabe, Bostwick, Hughes, West, & Boyd, 2010; McLaughlin, Hatzenbuehler, & Keyes, 2010), sexual compulsivity (Parsons et al., 2012), and internalized homophobia (Newcomb & Mustanski, 2010; Ross et al., 2010) may be more salient and a stronger driving force in sexual decision making than factors assessed in the current study. However, our findings should also be considered in light of what is currently understood regarding the development of a syndemic. Although the literature is limited, within this field there is growing acknowledgement that syndemics can be slow to emerge (Singer, 2009). Therefore, based on the correlations that we observed, what we may have identified is the *emergence* of a syndemic. On the contrary, there is also evidence of resiliency among populations generally considered marginalized by society (e.g., MSMW); this resiliency can serve as a protective factor against negative psychosocial health factors (Herrick et al., 2011). Therefore, among some populations who have experienced considerable stigma, syndemics may be less likely to develop. However, further research is needed to understand why syndemics emerge among some populations but not others.

Providing services for MSMW have been stymied by a lack of understanding sexual risk taking and social barriers. Although elevated rates of HIV among middle and upper class MSM and MSMW living in Cape Town have been documented since the beginning of the epidemic (Ras, Simson, Anderson, Prozesky, & Hamersma, 1983), virtually no data exist on MSMW of Black African and Coloured ancestry living in townships. Due to their cultural beliefs, Black Africans and Coloureds tend to hold strict views about sex, gender and familial roles. Unbending views of same-sex behaviors have a lengthy history in townships, particularly during the apartheid era. Many Black Africans living in townships partake in traditions largely based on gender and marriage and, therefore, view same-sex relationships as violating long standing cultural practices that need to be preserved.

Reports of verbal and physical assault (including death and "corrective" rape) against individuals who engage in same-sex behavior in townships have emerged which document the harsh environment that exists for MSMW. These beliefs are in contrast to South Africa's general characterization as a nation that has progressed in regards to LGBT rights–LGBT anti-discrimination laws exist and same-sex marriage is permitted. The distinction between acts of acceptance and rejection of same-sex behavior within South Africa has been largely driven, in part, by local customs. Urban areas harbor communities supporting LGBT rights; in stark contrast, townships lack safe environments for individuals engaging in same-sex behavior. It is possible that the larger social environment, wherein men from the current study reside, may contribute to the elevated rates of experiencing and perpetrating partner violence. MSMW living in townships would likely benefit greatly from a sense of safety in their community and social support from their peers.

Future studies should further investigate the needs of MSMW, including those directly relevant to sexual risk negotiation skills and perceptions of risk taking for HIV transmission. In particular, it would be beneficial to gain an understanding of the attitudes, beliefs, and knowledge of condom use with both casual and regular partners, and how these behaviors are affected by HIV status and HIV status disclosure. Moreover, the extent to which MSMW engage in concurrent sexual partnerships is an unknown but important factor to assess in HIV transmission. Relatedly, a substantial number of both MSW and MSMW reported being married and having more than one recent sex partner. However, it is unclear as to whether the partners of these men were aware of the sexual partnerships that were occurring outside of their marriage. Although there are critical ethical considerations to address, research focusing on the social environments of MSMW is likely essential for best understanding how risk taking among these men can be reduced. Studies investigating the extent to which wives, or other committed female partners are aware of outside partners must be conducted and data garnered from this work will be critical for informing prevention efforts.

Findings from the current study should be viewed in light of their limitations. Results were limited to men attending shebeens and cannot be generalized to the larger population. Findings may vary between people who do and do not attend shebeens. Data were cross sectional, which prevents reporting on causal findings. We also relied on self-report of potentially stigmatizing information, which could potentially bias responses. Our measure of risk histories was limited to physical and sexual violence, which does not encompass other forms of violence such as verbal and emotional abuse or neglect. Further information on sex behaviors examined separately by partner were not included in the current assessment and, therefore, we were unable to assess individual partner level data that may inform our findings. Finally, the small numbers of MSM we observed in the current study prohibited us from analyzing the sexual risk histories of these men.

In order to enact an effective HIV prevention strategy for individuals living in townships in South Africa, we must first acknowledge and understand the HIV-risk behaviors in which people are engaging. Based on findings from the current study, MSMW are a critical population to address when establishing targeted prevention efforts. Given the high levels of sexual and physical violence, and sexual risk taking in general, these efforts will likely need to address issues around experiencing multiple past traumas, accessing adequate health care, and providing MSMW with the necessary skills for engaging in sexual risk reduction behaviors.

References

Bengtsson, L., & Thorson, A. (2010). Global HIV surveillance among MSM: Is risk behavior seriously underestimated? *AIDS, 24,* 2301–2303.

Beyrer, C., Baral, S. D., van Griensven, F., Goodreau, S. M., Chariyalertsak, S., Wirtz, A.L., & Brookmeyer, R. (2012). Global epidemiology of HIV infection in men who have sex with men. *Lancet, 380,* 367–377.

Beyrer, C., Trapence, G., Motimedi, F., Umar, E., Iipinge, S., Dausab, F., & Baral, S. (2010). Bisexual concurrency, bisexual partnerships, and HIV among Southern African men who have sex with men. *Sexually Transmitted Infections, 86,* 323–327.

Brennan, D. J., Hellerstedt, W. L., Ross, M. W., & Welles, S. L. (2007). History of childhood sexual abuse and HIV risk behaviors in homosexual and bisexual men. *American Journal of Public Health, 97,* 1107–1112.

Burrell, E., Mark, D., Grant, R., Wood, R., & Bekker, L. G. (2010). Sexual risk behaviours and HIV-1 prevalence among urban men who have sex with men in Cape Town, South Africa. *Sexual Health, 7,* 149–153.

Chapman, J., Koleros, A., Delmont, Y., Pegurri, E., Gahire, R., & Binagwaho, A. (2011). High HIV risk behavior among men who have sex with men in Kigali, Rwanda: Making the case for supportive prevention policy. *AIDS Care, 23,* 449–455.

Cook, D. J., Guyatt, G. H., Juniper, E., Griffith, L., McIlroy, W., Willan, A.,... Epstein, R. (1993). Interviewer versus self-administered questionnaires in developing a disease-specific, health-related quality of life instrument for asthma. *Journal of Clinical Epidemiology, 46,* 529–534.

Gebreyesus, S. H., & Mariam, D. H. (2009). Assessment of HIV/AIDS related risks among men having sex with men (MSM) in Addis Ababa, Ethiopia. *Journal Public Health Policy, 30,* 269–279.

Geibel, S., Tun, W., Tapsoba, P., & Kellerman, S. (2010). HIV vulnerability of men who have sex with men in developing countries: Horizons studies, 2001–2008. *Public Health Reports, 125,* 316–324.

Gonzalez-Guarda, R. M., Florom-Smith, A. L., & Thomas, T. (2011a). A syndemic model of substance abuse, intimate partner violence, HIV infection, and mental health among hispanics. *Public Health Nursing, 28,* 366–378.

Gonzalez-Guarda, R. M., McCabe, B. E., Florom-Smith, A., Cianelli, R., & Peragallo, N. (2011b). Substance abuse, violence, HIV, and depression: An underlying syndemic factor among Latinas. *Nursing Research, 60,* 182–189.

Gorbach, P. M., Murphy, R., Weiss, R. E., Hucks-Ortiz, C., & Shoptaw, S. (2009). Bridging sexual boundaries: Men who have sex with men and women in a street-based sample in Los Angeles. *Journal Urban Health, 86*(Suppl. 1), 63–76.

Herrick, A. L., Lim, S. H., Wei, C., Smith, H., Guadamuz, T., Friedman, M. S., & Stall, R. (2011). Resilience as an untapped resource in behavioral intervention design for gay men. *AIDS and Behavior, 15*(Suppl. 1), S25–S29

Hightow, L. B., Leone, P. A., Macdonald, P. D., McCoy, S. I., Sampson, L. A., & Kaplan, A. H. (2006). Men who have sex with men and women: A unique risk group for HIV transmission on North Carolina college campuses. *Sexually Transmitted Disease, 33,* 585–593.

Kalichman, S. C., Cain, D., Eaton, L., Jooste, S., & Simbayi, L. C. (2011a). Randomized clinical trial of brief risk reduction counseling for sexually transmitted infection clinic patients in Cape Town, South Africa. *American Journal of Public Health, 101*(9), e9–e17.

Kalichman, S. C., Pinkerton, S. D., Carey, M. P., Cain, D., Mehlomakulu, V., Carey, K. B.,... Harel, O. (2011). Heterosexual anal intercourse and HIV infection risks in the context of alcohol serving venues, Cape Town, South Africa. *BMC Public Health, 11,* 807.

King, M., Semlyen, J., Tai, S. S., Killaspy, H., Osborn, D., Popelyuk, D., & Nazareth, I. (2008). A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. *BMC Psychiatry, 8,* 70.

Lane, T., Raymond, H. F., Dladla, S., Rasethe, J., Struthers, H., McFarland, W., & McIntyre, J. (2011). High HIV prevalence among men who have sex with men in Soweto, South Africa: Results from the Soweto Men's Study. *AIDS and Behavior, 15,* 626–634.

Lane, T., Shade, S. B., McIntyre, J., & Morin, S. F. (2008). Alcohol and sexual risk behavior among men who have sex with men in South African township communities. *AIDS and Behavior, 12*(4 Suppl.), S78–S85.

Lyons, A., Pitts, M., Grierson, J., Smith, A., McNally, S., & Couch, M. (2012). Sexual behavior and HIV testing among bisexual men: A nationwide comparison of Australian bisexual-identifying and gay-identifying men. *AIDS and Behavior, 16,* 1934–1943.

Malebranche, D. J., Arriola, K. J., Jenkins, T. R., Dauria, E., & Patel, S. N. (2010). Exploring the "bisexual bridge": A qualitative study of risk behavior and disclosure of same-sex behavior among black bisexual men. *American Journal of Public Health, 100,* 159–164.

McCabe, S. E., Bostwick, W. B., Hughes, T. L., West, B. T., & Boyd, C. J. (2010). The relationship between discrimination and substance use disorders among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health, 100,* 1946–1952.

McLaughlin, K. A., Hatzenbuehler, M. L., & Keyes, K. M. (2010). Responses to discrimination and psychiatric disorders among Black, Hispanic, female, and lesbian, gay, and bisexual individuals. *American Journal of Public Health, 100,* 1477–1484.

Mercer, C. H., Hart, G. J., Johnson, A. M., & Cassell, J. A. (2009). Behaviourally bisexual men as a bridge population for HIV and sexually transmitted infections? Evidence from a national probability survey. *International Journal of STD and AIDS, 20,* 87–94.

Merrigan, M., Azeez, A., Afolabi, B., Chabikuli, O. N., Onyekwena, O., Eluwa, G.,... Hamelmann, C. (2011). HIV prevalence and risk behaviours among men having sex with men in Nigeria. *Sexually Transmitted Infections, 87,* 65–70.

Meyer, J. P., Springer, S. A., & Altice, F. L. (2011). Substance abuse, violence, and HIV in women: A literature review of the syndemic. *Journal of Womens Health, 20,* 991–1006.

Mustanski, B., Garofalo, R., Herrick, A., & Donenberg, G. (2007). Psychosocial health problems increase risk for HIV among urban young men who have sex with men: Preliminary evidence of a syndemic in need of attention. *Annals of Behavioral Medicine, 34,* 37–45.

Napper, L. E., Fisher, D. G., Reynolds, G. L., & Johnson, M. E. (2010). HIV risk behavior self-report reliability at different recall periods. *AIDS and Behavior, 14,* 152–161.

Newcomb, M. E., & Mustanski, B. (2010). Internalized homophobia and internalizing mental health problems: A meta-analytic review. *Clinical Psychology Review, 30,* 1019–1029.

Operario, D., Smith, C. D., Arnold, E., & Kegeles, S. (2011). Sexual risk and substance use behaviors among African American men who have sex with men and women. *AIDS and Behavior, 15,* 576–583.

Parsons, J. T., Grov, C., & Golub, S. A. (2012). Sexual compulsivity, co-occurring psychosocial health problems, and HIV risk among gay and bisexual men: Further evidence of a syndemic. *American Journal of Public Health, 102,* 156–162.

Pitpitan, E. V., Kalichman, S. C., Eaton, L. A., Cain, D., Sikkema, K. J., Skinner, D.,... Pieterse, D. (2012). AIDS-related stigma, HIV

testing, and transmission risk among patrons of informal drinking places in Cape Town, South Africa. *Annals of Behavioral Medicine, 43*, 362–371.

Puhan, M. A., Ahuja, A., Van Natta, M. L., Ackatz, L. E., & Meinert, C. (2011). Interviewer versus self-administered health-related quality of life questionnaires: Does it matter? *Health and Quality of Life Outcomes, 9*(30), 1–11.

Ras, G. J., Simson, I. W., Anderson, R., Prozesky, O. W., & Hamersma, T. (1983). Acquired immunodeficiency syndrome: A report of 2 South African cases. *South African Medical Journal, 64*, 140–142.

Raymond, H. F., Kajubi, P., Kamya, M. R., Rutherford, G. W., Mandel, J. S., & McFarland, W. (2009). Correlates of unprotected receptive anal intercourse among gay and bisexual men: Kampala, Uganda. *AIDS and Behavior, 13*, 677–681.

Rispel, L. C., & Metcalf, C. A. (2009). Breaking the silence: South African HIV policies and the needs of men who have sex with men. *Reproductive Health Matters, 17*, 133–142.

Rispel, L. C., Metcalf, C. A., Cloete, A., Reddy, V., & Lombard, C. (2011). HIV prevalence and risk practices among men who have sex with men in two South African cities. *Journal of Acquired Immune Deficiency Syndrome, 57*, 69–76.

Rohde Bowers, J., Branson, C. M., Fletcher, J., & Reback, C. J. (2011). Differences in substance use and sexual partnering between men who have sex with men, men who have sex with men and women and transgender women. *Culture Health & Sexuality, 13*, 629–642.

Ross, M. W., Smolenski, D. J., Kajubi, P., Mandel, J. S., McFarland, W., & Raymond, F. H. (2010). Measurement of internalized homonegativity in gay and bisexual men in Uganda: Cross-cultural properties of the Internalized Homonegativity scale. *Psychology, Health & Medicine, 15*, 159–165.

SANAC. (2007). *HIV and AIDS and STI Strategic Plan for South Africa, 2007–2011*. http://www.doh.gov.za.

Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption-II. *Addiction, 88*, 791–804.

Scott-Sheldon, L. A., Carey, M. P., Carey, K. B., Cain, D., Vermaak, R., Mthembu, J.,… Kalichman, S. C. (2011). Impact of HIV testing on sexual health communication in South Africa. *Sexually Transmitted Infections, 87*, 242–247.

Siegel, K., Schrimshaw, E. W., Lekas, H. M., & Parsons, J. T. (2008). Sexual behaviors of non-gay identified non-disclosing men who have sex with men and women. *Archives of Sexual Behavior, 37*, 720–735.

Sikkema, K. J., Watt, M. H., Meade, C. S., Ranby, K. W., Kalichman, S. C., Skinner, D., & Pieterse, D. (2011). Mental health and HIV sexual risk behavior among patrons of alcohol serving venues in Cape Town, South Africa. *Journal of Acquired Immune Deficiency Syndrome, 57*, 230–237.

Singer, M. (2009). *Introduction to syndemics: A critical systems approach to public and community health*. San Francisco, CA: Wiley.

Smith, A. D., Tapsoba, P., Peshu, N., Sanders, E. J., & Jaffe, H. W. (2009). Men who have sex with men and HIV/AIDS in sub-Saharan Africa. *Lancet, 374*, 416–422.

Stall, R., Mills, T. C., Williamson, J., Hart, T., Greenwood, G., Paul, J.,… Catania, J. A. (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*, 939–942.

van Griensven, F., de Lind van Wijngaarden, J. W., Baral, S., & Grulich, A. (2009). The global epidemic of HIV infection among men who have sex with men. *Current Opinions in HIV/AIDS, 4*, 300–307.

Washington, T., & Brocato, J. (2010). Exploring the perspectives of substance abusing black men who have sex with men and women in addiction treatment programs: A need for a human sexuality educational model for addiction professionals. *American Journal of Men's Health, 5*, 402–412.

Weatherburn, P., Hickson, F., Reid, D. S., Davies, P. M., & Crosier, A. (1998). Sexual HIV risk behaviour among men who have sex with both men and women. *AIDS Care, 10*, 463–471.

Weir, S. S., Pailman, C., Mahlalela, X., Coetzee, N., Meidany, F., & Boerma, J. T. (2003). From people to places: Focusing AIDS prevention efforts where it matters most. *AIDS, 17*, 895–903.

Wold, C., Seage, G. R., III, Lenderking, W. R., Mayer, K. H., Cai, B., Heeren, T., & Goldstein, R. (1998). Unsafe sex in men who have sex with both men and women. *Journal of Acquired Immune Deficiency Syndrome and Human Retrovirology, 17*, 361–367.

Wolitski, R. J., & Fenton, K. A. (2011). Sexual health, HIV, and sexually transmitted infections among gay, bisexual, and other men who have sex with men in the United States. *AIDS and Behavior, 15*(Suppl. 1), S9–S17.

Zule, W. A., Bobashev, G. V., Wechsberg, W. M., Costenbader, E. C., & Coomes, C. M. (2009). Behaviorally bisexual men and their risk behaviors with men and women. *Journal of Urban Health, 86*(Suppl. 1), 48–62.