

HIV Risks Associated with Patronizing Alcohol Serving Establishments in South African Townships, Cape Town

Demetria Cain · Valerie Pare · Seth C. Kalichman ·
Ofar Harel · Jacqueline Mthembu · Michael P. Carey ·
Kate B. Carey · Vuyelwa Mehlomakulu ·
Leickness C. Simbayi · Kelvin Mwaba

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Abstract Alcohol use has been closely linked with HIV risk behaviors in South Africa. The places where people drink are often the same settings in which they meet new sex partners and may contribute independently to sexual risk. This current study examines the independent effects of patronizing alcohol serving establishments (shebeens) and alcohol use in predicting HIV risk behaviors. Men ($n=981$) and women ($n=492$) were recruited from inside shebeens and surrounding areas proximal to shebeens in eight separate neighborhoods in a Township in Cape Town, South Africa. Anonymous community surveys measured demographic characteristics, alcohol use, shebeen attendance, and sexual

risk behaviors. Comparisons of 1210 (82 %) participants who patronized shebeens in the past month with 263 (18 %) participants who did not patronize shebeens demonstrated higher rates of alcohol use frequency and quantity, more sexual partners, and higher rates of vaginal intercourse without condoms for the patrons. Multiple linear regression analysis found shebeen attendance in the past month predicted greater sexual risk for HIV beyond demographic characteristics and alcohol use. Social influences and environmental factors in shebeens could be contributing to sexual risk behavior independently of alcohol consumption. Further research is needed to understand the environmental factors of shebeens that promote and influence HIV risk behaviors.

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D. Cain (✉) · V. Pare · S. C. Kalichman · O. Harel
Center for Health Intervention and Prevention,
University of Connecticut,
2006 Hillside Road, Unit 1248,
Storrs, CT, USA 06269
e-mail: Demetria.cain@uconn.edu

J. Mthembu · V. Mehlomakulu · L. C. Simbayi
Human Sciences Research Council,
Cape Town, South Africa

M. P. Carey
Center for Behavioral and Preventive Medicine,
The Miriam Hospital,
Providence, RI, USA

M. P. Carey · K. B. Carey
Brown University,
Providence, RI, USA

K. Mwaba
University of the Western Cape,
Cape Town, South Africa

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Introduction

The HIV/AIDS epidemic persists in Sub-Saharan Africa where two-thirds of all people living with HIV/AIDS in the world reside. And in South Africa, the epidemic has been devastating with 5.7 million infected with HIV in 2008 and 1500 new HIV infections daily (UNAIDS 2010). Research has focused on identifying factors that contribute to HIV infection and associated risk behaviors. Among the most reliable predictors of sexual risk behaviors for HIV in South Africa is alcohol consumption (Cook and Clark 2005).

Extensive research in Sub-Saharan Africa has established a close relationship between alcohol and HIV risk behaviors (Pithey and Parry 2009). Alcohol consumption per drinker in South Africa is among the highest in the world (Rehm et al. 2003). Many attribute the high drinking prevalence to alcohol's historical significance in South Africa. Alcohol

has been used as a commodity to trade cattle and the ‘dop’ system uses alcohol to pay indigenous farm workers (Parry 2005). In particular, the country’s flourishing wine industry affords access to inexpensive wine. Alcohol’s effect on cognitive and affective processes has linked alcohol consumption with sexual risk behavior (Morojele et al. 2006; Simbayi et al. 2006; Weinhardt and Carey 2000). Alcohol may contribute to inconsistent condom use (Morojele et al. 2006), sexual coercion (Kalichman et al. 2007), and ultimately higher HIV prevalence (Fritz et al. 2002).

The ways in which alcohol influences sexual risk are complex. Morojele et al. (2006) developed a theoretical, culturally-relevant model examining alcohol’s effect on HIV risk in South Africa. Besides alcohol’s psychoactive properties that influence HIV risk behaviors, the context in which people drink may independently contribute to sexual risk behaviors. The places in which behavior occurs are the social settings in which attitudes and beliefs of a social group are held (Zinberg 1984). A place can be considered a risk environment when levels of influences, such as social interactions and social norms, and environmental factors, such as physical infrastructure, can promote risky health behaviors (Macintyre et al. 2002; Rhodes 2009). Previous research has noted an association between attendance at a specific risk settings and HIV-related behaviors (Latkin et al. 1994).

For HIV in South Africa, the places where people drink may influence alcohol-related sexual risks (Morojele et al. 2006). Weir et al. (2002) found that 94 % of all places in South Africa where people meet new sex partners are alcohol-serving establishments. Many have pointed to drinking venues as targets for HIV prevention services because they are places where men and women socialize and high-risk encounters occur (Kalichman 2010; Weir et al. 2003). For example, research in Zimbabwe beer halls (Fritz et al. 2002; Lewis et al. 2005) demonstrates that alcohol serving establishments amplify HIV infection because they are places where men meet sex partners and high-risk sexual encounters occur. Thus, it has been shown that in addition to alcohol use alone, simply patronizing drinking establishments may also contribute to sexual risk (Morojele et al. 2006).

In South Africa, informal drinking places where liquor is usually sold without a license (i.e., shebeens) may hold great importance. Traditionally, beer drinking practices have been linked to cultural practices of community engagement and the communal sharing of resources. Historically, shebeens were the settings of communal beer drinking rituals (McAllister 2003) and where local musicians and singers living in townships could start their musical careers. They were also the places for Black Africans to drink when Apartheid prohibited Blacks from drinking in bars reserved for Whites only (Parry 2005). Currently, shebeens are mostly home-based enterprises located within residential areas (Petersen and Charman 2010) and can sell beer,

traditional African sorghum beer, wines, and liquors (Maiden 2001). They can be located in living rooms, garages, backyards, or back rooms of small houses or shacks and offer the opportunity for owners to make a living selling alcohol to neighbors and community patrons. Shebeens can range from being informal businesses with no legal license that operate 2–3 days a week to more formal businesses with legal license and operate daily. Physical resources in shebeens vary extensively from nothing but barren walls, to a few tables and chairs, or sometimes a radio or television for entertainment. Larger shebeens may serve food as well as alcohol. Shebeens continue to be recognized as a community’s “living room” where residents can gather and engage in social, political, and entertainment activities. However, there has been an established link between alcohol, shebeens, and violence (Parry and Dewing 2006).

Although the associations between alcohol use, drinking environments, and alcohol-related HIV risk behaviors have been examined, we are not aware of past research that has disentangled the effects of drinking and the drinking environment on sexual risk behaviors in the South African context. People who drink in shebeens may be at varying degrees of risk and the shebeen environments may independently contribute to risks. The current research tested two hypotheses: (a) alcohol is associated with sexual risk taking and (b) shebeens are linked with HIV risk behavior.

We believe this current study is the first to test the independent effects of patronizing alcohol serving establishments and alcohol use in predicting HIV risk behaviors in the South Africa. Specifically, we tested whether shebeen attendance predicts HIV risk behavior over and above alcohol consumption and demographics characterizing shebeen patrons. We recruited men and women from shebeens and the community surrounding the shebeens to complete anonymous surveys and compared individuals who actively patronize shebeens to persons who are proximal to but do not patronize shebeens. We hypothesized that drinking in shebeens will contribute to sexual risk behavior over and above other factors, including alcohol consumption itself.

Methods

Participants

Participants were 981 men and 492 women recruited from a suburban Black African Township in Cape Town, South Africa to participate in a cross sectional anonymous community survey. All participants were 18 years of age or older, with a median age of 30. Nearly all (98 %) participants were indigenous Black African, 53 % (776) were married, and 22 % (320) were employed.

Research Setting and Procedures

The Black African Township in the current study is located 20 km outside of Cape Town's business district and residents are primarily of Xhosa heritage. Participants were recruited to take part in a community survey in eight separate neighborhoods within this Township. Neighborhoods were defined as an area approximately 0.5 km wide and contained at least one shebeen serving more than 75 patrons. Using methods described by Weir et al. (2002, 2003), we conducted rapid community assessments to identify eight shebeens located at least 1 km from each other within the Township. All shebeens were visited and owners and patrons were assessed for shebeen attributes. Field workers were eight indigenous men and women from communities similar to our selected areas and spoke both Xhosa and English. Field workers approached persons on the street and persons socializing and drinking in the neighborhood shebeens and asked if they wanted to fill out a survey that could help their community. Approximately 50 % of the participants were recruited inside shebeens and 50 % were recruited from the community surrounding the shebeen. Persons who agreed to participate (95 %) were administered a 9-page anonymous survey that most completed in 15–20 min. Participants were compensated for their time and effort with a non-monetary item (keychain or shopping bag). Surveys were self administered in either English or Xhosa, but were interviewer-assisted (3 %) when a person needed additional reading assistance. All surveys and study procedures were approved by the US and South African Institutional Boards.

Measures

Measures used in this analysis included demographic characteristics, alcohol use, shebeen attendance, lifetime risk characteristics, and sexual risk behaviors.

Demographic Characteristics Participants reported demographic characteristics including ethnicity, employment status, marital status, age, and whether they had been tested for HIV.

Alcohol Use Alcohol use was assessed using items adapted from the AUDADIS-IV (Grant et al. 2003). Frequency was measured by participants reporting how many days they drank alcohol in the past month: (a) never, (b) once in the past month, (c) 2–3 times a month, (d) once a week, (e) 2 times a week, (f) 3–4 times a week, and (g) nearly every day. Quantity was measured as number of times in the past month a participant drank five or more drinks on one occasion (binge drank) and was an indicator of heavy episodic drinking. Responses included (a) never, (b) once in the past month, (c) 2–3 times a month, (d) once a week, (e) 2 times a

week, (f) 3–4 times a week, and (g) nearly every day. Drinking was assessed independently of shebeen attendance.

Shebeen Attendance To assess patronizing drinking establishments independent of alcohol use, participants were asked how many times they went to a shebeen in the past month. Participants were given a list of all the shebeens in their neighborhood that included an 'any other shebeen' option and asked whether they went to any of those alcohol serving establishments using the responses (a) never, (b) 1 to 4 times, (c) 5 to 10 times, (d) 11–20 times, or (e) 21 or more times in the past month. Participants were classified as a 'shebeen patron' if they attended any alcohol serving establishment inside or outside their neighborhood at least once in the past month. Participants were classified as a 'non-shebeen patron' if they did not attend any alcohol serving establishment in the past month.

Lifetime Risk Characteristics HIV risk history was assessed as lifetime risk characteristics for HIV by asking participants whether they had a history of a STD diagnosis, had previously tested for HIV, and self-reported HIV diagnosis. Participants were also asked whether they had ever been forced to have sex, displayed violence toward a sex partner, or were afraid to ask partner to use a condom. Responses included (a) never, (b) in the past 30 days, or (c) yes, but not in the past 30 days.

Sexual Risk Behaviors Participants reported whether they currently had primary and casual sexual partners and the frequency of condom use with each partner type. Frequency of condom use with primary and casual partners was measured as (a) never, (b) rarely, (c) some of the time, (d) half of the time, (e) most of the time, or (f) all of the time. Consistent condom use was coded as using condoms all of the time. Participants also reported the number of unprotected sexual acts in the past month as vaginal intercourse without condoms and anal intercourse without condom use regardless of partner type.

Data Analyses

In the first analysis, we looked at the demographic characteristics, alcohol use, lifetime risk characteristics, and sexual behaviors of shebeen patrons ($n=1210$) compared to non-shebeen patrons ($n=263$). Results are reported for men and women separately. The sample used for this analysis was all respondents with non-missing values on all variables of interest in the subsequent multiple linear regression analysis. For the categorical and continuous characteristics, we conducted logistic regression and report odds ratios with 95 % confidence intervals. Missing values for the categorical

characteristics resulted in slightly different cell sizes for some variables and never exceeded 3 % of cases.

To test the second hypothesis (i.e., that patronizing shebeens would predict sexual risk behavior beyond demographics and alcohol use), we used multiple linear regressions (Tabachnick and Fidell 2007). For demographics, gender was coded as male = 0 and female = 1, and employment was coded as unemployed = 0 and employed = 1. For alcohol use, we computed an Alcohol Use Index for each participant as the product of alcohol use frequency and alcohol consumption quantity. Patronizing a shebeen in the past month was coded as no = 0 and yes = 1. For risky sexual behavior, we computed a Risk Behavior Index (RBI) for each participant as the product of number of sex partners and the number of unprotected sex acts. Because RBI was skewed, we transformed it to log (RBI). The initial regression (Step 1) was completed with only demographics as the predictor variable, because previous studies have shown them to be significantly related to risky behavior. We then performed a second regression (Step 2) to determine whether the Alcohol Use Index contributed significantly ($p < 0.05$) to the explanation of log (RBI) beyond demographics. Finally, we performed a third regression (Step 3) to determine whether the inclusion of the shebeen patron indicator contributed significantly ($p < 0.05$) to the explanation of log (RBI) over and beyond demographics and alcohol use characteristics.

Results

Results showed that 1210 (82 %) individuals patronized a shebeen in the past month and 263 (18 %) individuals did not patronize a shebeen in the past month. Among shebeen patrons, 885 (73 %) went at least 5 times (weekly) in the past month and 230 (19 %) reported going at least 21 times (almost daily) in the past month. The sample of shebeen patrons included 641 patrons who were assessed inside a shebeen and 569 patrons who were assessed outside a shebeen.

Comparing Shebeen Patrons and Non-Shebeen Patrons

Among men, 890 (91 %) reported patronizing a shebeen in the past month (see Table 1). For demographic characteristics, there were no differences between shebeen patrons and non-shebeen patrons in ethnicity, employment, marital status, age and HIV testing history. For frequency of alcohol consumption, men who drank alcohol 1–4 times in the past month or at least 2 times a week were significantly more likely to patronize a shebeen in the past month. For quantity of alcohol consumption in the past month, men who binge drank between 1 and 4 times in the past month or at least 2

times a week were more likely to be a shebeen patron. For lifetime risk characteristics, men who reported having a history of an STD, being forced to have sex, perpetrating violence toward a sex partner or being afraid to ask a partner to use condoms were more likely to patronize a shebeen in the past month (see Table 2). Men who reported currently having a primary partner were more likely to be a shebeen patron; however, consistent condom use with primary partners did not differ between shebeen patrons and non-shebeen patrons. Men who reported currently having a casual or one time partner were also more likely to attend a shebeen, but again, consistent condom use with casual partners did not differ among shebeen patrons and non-shebeen patrons. Male shebeen patrons were significantly more likely to have vaginal intercourse without condoms in the past month than non-shebeen patrons.

Among women, 320 (65 %) reported patronizing a shebeen in the past month (see Table 1). For demographic characteristics, women who were unmarried were more likely to patronize a shebeen in the past month. There were no significant differences between shebeen patrons and non-shebeen patrons in ethnicity, employment, age, and HIV testing history. For frequency of alcohol consumption, women who drank alcohol 1–4 times in the past month or at least 2 times a week were significantly more likely to patronize a shebeen in the past month. For quantity of alcohol consumption in the past month, women who binge drank 1–4 times a month or at least 2 times a week were more likely to be a shebeen patron. For lifetime risk characteristics, women who reported having a history of an STD, being forced to have sex, perpetrating violence toward a sex partner or being afraid to ask a partner to use condoms were more likely to have gone to a shebeen in the past month (see Table 2). Women who reported currently having a primary sex partner did not differ between women who patronize a shebeen and women who do not patronize a shebeen. Women who reported currently having a casual or one time partner were more likely to patronize a shebeen and reported more consistent condom use with those casual partners. Female shebeen patrons were significantly more likely to have vaginal intercourse without condoms in the past month than non-shebeen patrons.

Multiple Linear Regressions Predicting HIV Risk Taking Behaviors among Shebeen Patrons

Three linear regressions tested the hypothesis that patronizing shebeens would predict HIV risk over and above alcohol use (See Table 3). In step 1, being male and employed were associated with significantly greater sexual risks for HIV ($F_{3, 1469} = 6.44, p < 0.05$, adjusted $R^2 = 0.011$). In step 2, an increase in the Alcohol Use Index was associated with

Table 1 Demographics and alcohol consumption among men and women who patronize and do not patronize shebeens in the past month

	Men <i>N</i> =981				Women <i>N</i> =492							
	Shebeen patrons		Non-Shebeen Patrons		OR	95 % CI	Shebeen Patrons		Non-Shebeen Patrons		OR	95 % CI
	<i>N</i> =890 (91 %)	<i>N</i> =91 (9 %)	<i>N</i> =320 (65 %)	<i>N</i> =172 (35 %)								
	<i>N</i>	%	<i>N</i>	%			<i>N</i>	%	<i>N</i>	%		
Demographic Characteristics												
Black/African	877	99 %	89	98 %	1.6	0.4–7.5	307	96 %	170	99 %	0.3	0.1–1.4
Employed	489	55 %	44	48 %	1.3	0.8–2.0	161	50 %	82	48 %	1.1	0.8–1.6
Married	192	22 %	26	29 %	0.7	0.4–1.1	44	14 %	58	34 %	0.3*	0.2–0.5
Age (<i>M, SD</i>)	32.4	9.0	33.2	10.6	1.0	0.97–1.01	29.9	7.1	31.1	9.4	.98	0.96–1.00
Test for HIV	566	64 %	49	54 %	1.5	0.98–2.3	229	72 %	117	68 %	1.2	0.8–1.7
Frequency of Alcohol Consumption in the Past Month												
At least 2 × per week	555	62 %	12	13 %	10.9*	5.9–20.3	182	57 %	8	5 %	27.0*	12.9–56.9
1–4 times a month	291	33 %	13	14 %	2.9*	1.6–5.3	103	32 %	19	11 %	3.8*	2.2–6.5
Never drank in past month	44	5 %	66	73 %	0.02*	0.01–0.03	35	11 %	145	84 %	0.02*	0.01–0.04
Quantity of Alcohol Consumption Binge Drank in the Past Month												
At least 2 × per week	416	47 %	6	7 %	12.4*	5.4–28.8	141	44 %	3	2 %	44.4*	13.9–141.9
1–4 times a month	338	38 %	11	12 %	4.5*	2.4–8.5	123	38 %	9	5 %	11.3*	5.6–23.0
Never drinks more than 5 drinks	136	15 %	74	81 %	0.04*	0.02–0.07	56	18 %	160	93 %	0.02*	0.01–0.03

**p*<.05

significantly greater sexual risks for HIV ($F_{4, 1468} = 12.77, p < 0.05$, adjusted $R^2 = 0.031$). In step 3, being a shebeen patron was associated with significantly greater sexual risks for HIV ($F_{5, 1467} = 13.55, p < 0.05$, adjusted $R^2 = 0.041$). Results of the first stage of the multiple regression analysis (comparing step 1 and step 2) indicated that the alcohol use characteristic predicts sexual risk for HIV beyond demographic characteristics alone ($F_{1,1468} = 31.69, p < 0.05$). Results of the second stage of the multiple linear regression analysis (comparing step 2 and step 3) indicated that shebeen attendance predicts sexual risk for HIV beyond the demographic and alcohol use characteristics ($F_{1,1467} = 16.14, p < 0.05$), supporting our hypothesis.

Discussion

Both men and women shebeen patrons reported more characteristics indicative of HIV risk, including previous STD diagnosis, being forced to have sex, committing violence toward a sex partner, and being afraid to ask sex partners to use condoms. Men and women shebeen patrons are consuming alcohol more frequently and in greater quantities than men and women who have not patronized a shebeen in the past month. Men and women shebeen patrons also reported higher rates of vaginal intercourse without condoms compared to non-shebeen patrons. Men shebeen

patrons were more likely than non-shebeen patrons to have primary partners and both men and women shebeen partners were more likely than non-shebeen patrons to have casual partners. However, women shebeen patrons were more likely to use condoms consistently with casual partners than women non-shebeen patrons or men overall. Thus, women who patronize shebeens demonstrated a mixed pattern of risk and protective behaviors relative to all men and women who do not patronize shebeens.

Previous research would suggest that the increased HIV risk among shebeen patrons is associated with an increase in alcohol consumption frequency and quantity and alcohol’s psychoactive effects that limit reasoning skills and judgment, lower inhibitions, and increase sexual arousal. However, the current findings suggest that shebeen attendance affects HIV risk over and above alcohol use and demographics. Attending a shebeen increases a person’s risk regardless of their alcohol consumption. Thus, there are likely characteristics and social dynamics within alcohol serving establishments that predict HIV risk independent of alcohol consumption. Morojele et al. (2006) research characterizes drinking environments as moderators in the link between alcohol and risky sex, but also as independent predictors of sexual risk. The ecological perspective on behavior suggests that social influences and environment factors affect HIV behaviors (Latkin and Knowlton 2005), and this view is supported by our findings. Shebeens are

Table 2 Risk characteristics among men and women who patronize and do not patronize shebeens in the past month

	Men <i>N</i> =981				Women <i>N</i> =492							
	Shebeen Patron		Non-Shebeen Patron		Shebeen Patron		Non-Shebeen Patron					
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	OR	95 % CI		
Lifetime Risk Characteristics												
History of STD Diagnosis	366	41 %	25	28 %	1.8*	1.1–3.0	130	41 %	53	31 %	1.5*	1.04–2.3
Self reported HIV +	55	8 %	8	13 %	0.6	0.3–1.3	35	13 %	11	8 %	1.7	0.8–3.4
Forced to have sex	140	16 %	7	8 %	2.3*	1.0–5.0	104	33 %	31	18 %	2.2*	1.4–3.4
Violent toward a sex partner	380	43 %	20	22 %	2.7*	1.6–4.5	76	24 %	17	10 %	2.8*	1.6–5.0
Afraid to ask partner to use condom	193	22 %	9	10 %	2.5*	1.3–5.2	103	32 %	30	17 %	2.2*	1.4–3.6
Current Risk Characteristics												
Has a primary partner	752	85 %	62	68 %	2.6*	1.6–4.2	264	83 %	132	77 %	1.5	0.9–2.3
Consistent condom use with primary partners	151	19 %	17	23 %	0.8	0.4–1.4	63	23 %	32	22 %	1.0	0.6–1.7
Has casual sex partners	419	47 %	23	26 %	2.6*	1.6–2.6	93	29 %	9	5 %	7.4*	3.6–15.0
Consistent condom use with casual partner	215	38 %	14	29 %	1.5	0.8–2.8	48	29 %	6	9 %	4.5*	1.8–11.1
Vaginal intercourse without condoms in past month	591	66 %	38	42 %	2.8*	1.8–4.3	209	65 %	89	52 %	1.8*	1.2–2.6
Anal intercourse without condoms in past month	98	11 %	6	7 %	1.8	0.7–4.1	27	8 %	7	4 %	2.2	0.9–5.1

**p*<.05

settings for interactions between friendship and sexual networks and the risk characteristics of some individuals could be affecting the networks overall. Social influences such as social norms and perceptions of normative behavior could affect the behaviors of shebeen patrons. Environmental factors and the physical attributes of the setting could contribute to HIV risk behaviors, such as number of patrons, music, dancing, amount of alcohol sold, lack of HIV prevention messages, and access to free condoms.

These results should be considered in light of study limitations. First, we recruited a convenience sample of shebeens patrons and neighbors proximal to the shebeens.

Our data cannot indicate how common shebeen patronizing is, nor whether the patrons we recruited are representative of shebeen patrons overall. Second, we relied upon self-reported behavioral data. Use of anonymous surveys was intended to minimize bias and, when bias in self-report occurs, it is usually in the direction of social desirability. Therefore, we believe that alcohol consumption and sexual risks may be higher than the rates reported. Thirdly, we did not measure specific characteristics of these shebeens that might speak to which social influences or the environmental factors that may be associated with HIV risk behaviors. Notwithstanding these limitations, we believe that our

Table 3 Multiple linear regressions predicting sexual risk behaviors

Summary of Regression Steps 1, 2, and 3						
Coefficients:	Step 1		Step 2		Step 3	
	Beta	Std. Error	Beta	Std. Error	Beta	Std. Error
(Intercept)	1.6343***	0.1670	1.3428***	0.1733	0.9554***	0.1975
Age	0.0026	0.0049	0.0014	0.0048	0.0028	0.0049
Gender	−0.2118**	0.0898	−0.1166	0.0905	−0.0168	0.0934
Employment	0.2895***	0.0852	0.3128***	0.0845	0.2909**	0.0842
Alcohol Use Index			0.0166***	0.0030	0.0111*	0.0033
Shebeen Patron					0.5065*	0.1261

* *p*<.05; ** *p*<.01; *** *p*<.001; Gender (0=male, 1=female), Employment (0=no, 1=yes), Shebeen Patron (0=no, 1=yes)

findings are important for understanding the importance of shebeens and drinking environments in HIV risk.

There has been recent interest at the provincial government level to regulate alcohol serving establishments. The Western Cape Liquor Act of 2008 calls for the closing of all shebeens that operate without a liquor license (Provincial Government of Western Cape 2008). However, there has been significant protest towards the act because these micro-enterprises provide economic resources to poor families in the townships (Petersen and Charman 2010; Phaliso 2008). Thus, the debate exists between traditional practices of beer drinking and economic benefits of shebeens with the need to close settings of high crime and HIV risk. This is very reminiscent of early days in the HIV epidemic when public health departments debated on whether to close bath houses; the individual freedoms of sexual liberation were being contested by the need to curtail the spread of HIV among men who have sex with men (MSM).

The findings from this study cannot speak to the debate surrounding the closing of illegal shebeens. However, evidence that patronizing shebeens contributes to HIV risk over and above alcohol consumption contributes to the knowledge base on alcohol and HIV prevention research in South Africa and has implications for HIV prevention intervention development in this context. South Africa is currently experiencing increases in both HIV incidence and alcohol consumption. The current findings suggest that structural factors of drinking environments contribute to higher rates of HIV risk behavior. However, it still remains unclear what characteristics of these shebeens contribute to patron risk or if the risk is because shebeens are the gathering place of patrons who are already practicing risky behaviors. Because shebeen factors that link patronizing to HIV risk may be different for different drinking environments, detailed ecological and social dynamics analyses are needed to determine shebeen characteristics that are most closely associated with sexual risk for HIV. This research also has implications for HIV prevention intervention development. Our findings highlight the need for multilevel interventions that not only promote behavior change at the individual level, but also incorporate social influence and environmentally based prevention components to intervene at the shebeen level to address the characteristics of the drinking environment that contribute to risk. The influences of the physical and social environmental factors of shebeens will hinder efforts to reduce HIV risk and should therefore be the target of integrative interventions.

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References

- Cook, R. L., & Clark, D. B. (2005). Is there an association between alcohol consumption and sexually transmitted diseases? A systematic review. *Sexually Transmitted Diseases*, 32, 156–164.
- Fritz, K. E., Woelk, G. B., Bassett, M. T., McFarland, W. C., Routh, J. A., Tobaiwa, O., et al. (2002). The association between alcohol use, sexual risk behavior, and HIV infection among men attending beerhalls in Harare, Zimbabwe. *AIDS and Behavior*, 6, 221–228.
- Grant, B. F., Dawson, D. A., Stinson, F. S., Chou, P. S., Kay, W., & Pickering, R. (2003). The Alcohol Use Disorder and Associated Disabilities Interview Schedule-IV (AUDADIS-IV): Reliability of alcohol consumption, tobacco use, family history of depression and psychiatric diagnostic modules in a general population sample. *Drug and Alcohol Dependence*, 71, 7–16.
- Kalichman, S. C. (2010). Social and structural HIV prevention in alcohol-serving establishments. *Alcohol Research and Health*, 33, 184–194.
- Kalichman, S. C., Simbayi, L. C., Kaufman, M., Cain, D., & Jooste, S. (2007). Alcohol use and sexual risks for HIV/AIDS in sub-Saharan Africa: Systematic review of empirical findings. *Prevention Science*, 8, 141–151.
- Latkin, C. A., & Knowlton, A. R. (2005). Micro-social structural approaches to HIV prevention: A social ecological perspective. *AIDS Care*, 17, S102–S113.
- Latkin, C. A., Mandell, W., Vlahov, D., Oziemkowska, M., Knowlton, A., & Celentano, D. (1994). My place, your place, and no place: Behavior settings as a risk factor for HIV-related injection practices of drug users in Baltimore, Maryland. *American Journal of Community Psychology*, 22, 415–430.
- Lewis, J. J., Garnett, G. P., Mhlanga, S., Nyamukapa, C. A., Donnelly, C. A., & Gregson, S. (2005). Beer halls as a focus for HIV prevention activities in rural Zimbabwe. *Sexually Transmitted Diseases*, 32, 364–369.
- Macintyre, S., Ellaway, A., & Cummins, S. (2002). Place effects on health: How can we conceptualize, operationalize and measure them? *Social Science and Medicine*, 55, 125–139.
- Maiden, P. (2001). Substance abuse in the New South Africa. *Employee Assistance Quarterly*, 16, 65–82.
- McAllister, P. (2003). Culture, practice, and the semantics of Xhosa beer-drinking. *Ethnology*, 43, 187–207.
- Morojele, N. K., Kachieng'a, M. A., Mokoko, E., Nkoko, M. A., Parry, C. D. H., Nkowane, A. M., et al. (2006). Alcohol use and sexual behaviour among risky drinkers and bar and shebeen patrons in Gauteng province, South Africa. *Social Science & Medicine*, 62, 217–227.
- Parry, C. D. (2005). South Africa: Alcohol today. *Addiction (Abingdon, England)*, 100, 426–429.
- Parry, C. D., & Dewing, S. (2006). A public health approach to addressing alcohol-related crime in south Africa. *African Journal of Drug & Alcohol Studies*, 5, 41–56.
- Petersen, L. M., & Charman, A. J. E. (2010). Case study: Understanding the local economic impact of the closure of shebeens in the Western Cape as a consequence of the new Western Cape liquor act, 2008. *The Small Business Monitor*, 6, 102–112. Retrieved from <http://www.seda.org.za/Publications/Publications/SEDA%20SBM%20Vol.6%20Issue%201%202010.pdf#page=104>
- Phaliso, S. (2008, November 30, 2008). Cape shebeens face closure. *West Cape News*. Retrieved from <http://westcapenews.com/?p=224>
- Pithey, A., & Parry, C. (2009). Descriptive systematic review of sub-Saharan African studies on the association between alcohol use and HIV infection. *SAHARA J: Journal of Social Aspects of HIV/AIDS Research Alliance/SAHARA, Human Sciences Research Council*, 6, 155–169.

- Provincial Government of Western Cape. (2008). Western Cape Liquor Act, 6582.
- Rehm, J., Rehn, N., Room, R., Monteiro, M., Gmel, G., Jernigan, D., et al. (2003). The global distribution of average volume of alcohol consumption and patterns of drinking. *European Addiction Research*, 9, 147–156.
- Rhodes, T. (2009). Risk environments and drug harms: A social science for harm reduction approach. *International Journal of Drug Policy*, 20, 193–201.
- Simbayi, L. C., Mwaba, K., & Kalichman, S. C. (2006). Perceptions of the combination of HIV/AIDS and alcohol as a risk factor among STI clinic attenders in South Africa: Implications for HIV prevention. *Social Behavior and Personality*, 34, 535–544.
- Tabachnick, B., & Fidell, L. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson Education.
- UNAIDS. (2010). *2010 report on the global AIDS epidemic*. Joint United Nations Programme on HIV/AIDS.
- Weinhardt, L. S., & Carey, M. P. (2000). Does alcohol lead to sexual risk behavior? Findings from event-level research. *Annual Review of Sex Research*, 11, 125–157.
- Weir, S. S., Morroni, C., Coetzee, N., Spencer, J., & Boerma, J. T. (2002). A pilot study of a rapid assessment method to identify places for AIDS prevention in Cape Town, South Africa. *Sexually Transmitted Infections*, 78, i106–i113.
- 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 (London, England)*, 17, 895–903.
- Zinberg, N. (1984). *Drug, set, and setting*. New Haven, CT: Yale University Press.