Structural Characteristics of Alcohol Venues are Associated with Positive HIV Test Results in Rural KwaZulu-Natal, South Africa

Sarah Norton,[1] Anthony Moll,[2] Neo Morojele,[3] Gerald Friedland,[4] Sheela V. Shenoi[4]
[1] Duke University [2] Philanjalo, Tugela Ferry, South Africa
[3] University of Johannesburg, South Africa
[4] Yale University School of Medicine AIDS Program, New Haven, CT, USA

Introduction

- The HIV epidemic in South Africa is among the largest in the world with a prevalence of 20% among adults.
- The South African National Strategic Plan recognizes the need to address social and structural barriers to HIV prevention, as well as sociocultural and behavioral drivers, including alcohol abuse.
- We sought to evaluate the relationship between structural characteristics of Alcohol Venues (AV) and HIV status of patrons.

Methodology

- The study was conducted in rural Msinga, South Africa where, as part of a community-based approach, education, counseling and HIV testing was offered at a convenience sample of AVs.
- Staff completed a structural characteristic checklist of the AVs where testing occurred.
- Categorical analyses evaluated the association between structural characteristics and positive HIV results.

Results

- 488 individuals tested at 46 AVs, 43 (8.8%) were seropositive.
- Higher HIV prevalence was significantly associated with AVs that were:
  - Well-maintained (p=0.008)
  - In town (p=0.006) compared to remote
  - Had an indoor toilet (p=0.004)
  - Discrete gender bathrooms compared to a single bathroom (p=0.003)
  - Security guard present (p=0.047).

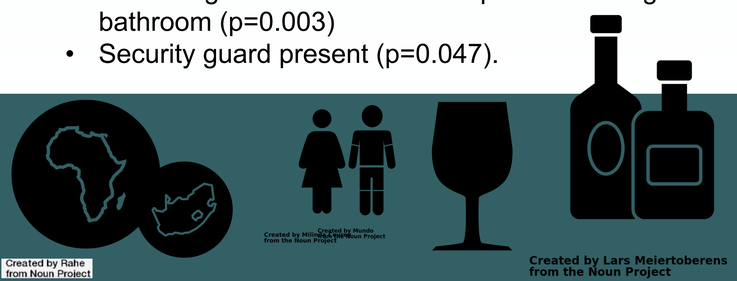

Table 2. Baseline Characteristics of Shebeens (n=46)

Characteristic	# of Shebeens, n (%)
Located out of town (vs. in town)	33 (71.7)
Unregistered	26 (56.5)
Informal shebeen	34 (73.9)
Unlicensed shebeen	27 (58.7)
Gravel Road	20 (43.5)
Number of Rooms (n=44)	
1 room	37 (84.1)
2 rooms	6 (13.6)
3+ rooms	1 (2.3)
Lighting (vs no lighting)	45 (97.8)
Seating (n=45)	
None	7 (15.6)
Makeshift	28 (62.2)
Seats at tables	10 (22.2)
Bathrooms	
None	29 (63.0)
Indoor	6 (13.0)
Outdoor	11 (26.1)
Bathroom Gender (n=17)	
One bathroom: Men only/ Unisex	8 (47.1)
Separate men and women	9 (52.9)
Well-maintained	36 (78.3)
Surrounding area (n=38)	
Stand alone	13 (34.2)
Adjacent tuck shop	17 (44.7)
Butchery	8 (21.1)
Recreational space*	
Outdoor space (n=45)	40 (88.8)
Game areas (n=43)	6 (14.0)
Pool tables (n=45)	15 (33.3)
Television (n=45)	15 (33.3)
Music system (n=44)	18 (41.0)
Employees*	
Waiter	1 (2.2)
Cleaner	21 (45.7)
Security	5 (10.9)
DJs	5 (10.9)
Women behind the counter	16 (34.8)
Men behind the counter	30 (66.0)
Events (n=45)*	
Live music	0 (0)
Weekend events	3 (6.5)
Gambling	5 (10.9)
Health Awareness*	
Under-age drinking sign	12 (26.1)
Smoking cessation signs	4 (8.7)
HIV prevention messages	1 (2.2)
Condoms available	10 (21.7)

Table 3. Correlates of HIV Prevalence at Alcohol Venues

Characteristic		p-value
In vs. out of town		0.006
Registration Status		0.08
Informal vs. Formal		0.49
Liquor license status		0.10
Accessibility		0.15
Physical environment	Number of Rooms	0.13
	Lighting	0.17
	Seating	0.08
	Bathroom (indoor/ outdoor/ none	0.004
	Bathroom (Gender specific)	0.0003
Maintenance		0.008
Recreational factors	Outdoor space	0.30
	Game areas	0.67
	Pool tables	0.75
	Television	0.97
	Music system	0.99
Recreational events	Live music	NA
	Weekend events	0.38
	Gambling	0.57
Employee classification	Waiter	0.38
	Cleaner	0.34
	Security	0.047
	DJ	0.48
	Women behind counter	0.29
Preventative health messages	Under-age drinking sign	0.08
	Smoking cessation sign	0.51
	HIV prevention messages	0.21
	Condoms available	0.56

Discussion

Key Take Away:

- Higher HIV prevalence was associated with certain structural characteristics of AVs.

Correlates of HIV Prevalence:

- Being located in town rather than remotely in this rural area
- Bathrooms: indoors, unisex and gender-specific
- Well maintained
- Employing security personnel

Future Steps:

- Alcohol use is well recognized as a risk factor for HIV acquisition, attention to venues where alcohol is consumed is important for informing risk reduction interventions.
- Data from AVs may inform future interventions to identify those at risk, improve engagement in HIV care, and potentially interrupt transmission.
- Further research to understand social dynamics within AVs and how these structural characteristics facilitate risk behaviors to inform community-based interventions that can address HIV risk.

Acknowledgements

- Acknowledgements: Special thanks to the Philanjalo Community Health Workers who assisted with this project.
- Source of Funding: STOP TB Grant, Geneva, Switzerland. Doris Duke International Clinical Fellowship, Doris Duke Charitable Foundation FRCS. Sarah Norton was a Doris Duke Clinical Research Fellow during the 2016-2017 Academic Year.