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#### REFERENCES

- 1. Scully EP. Sex differences in HIV infection. *Curr HIV/AIDS Rep.* 2018;15:136–146.
- UNAIDS Global AIDS Update. 2018. Available at: http://www.unaids.org/en/resources/ fact-sheet. Accessed January 25, 2019.
- National Institutes of Health. NIH Policy on Sex as a Biological Variable. Available at: https://orwh.od.nih.gov/sex-gender/nihpolicy-sex-biological-variable. Accessed January 20, 2019.
- Clayton JA. Applying the new SABV (sex as a biological variable) policy to research and clinical care. *Physiol Behav.* 2018;187:2–5.
- Sugimoto CR, Ahn YY, Smith E, et al. Factors affecting sex-related reporting in medical research: a cross-disciplinary bibliometric analysis. *Lancet.* 2019;393:550–559.
- Lee SK. Sex as an important biological variable in biomedical research. *BMB Rep.* 2018; 51:167–173.
- Arnold AP. Promoting the understanding of sex differences to enhance equity and excellence in biomedical science. *Biol Sex Differ*. 2010;1:1.
- Liu KA, Mager NA. Women's involvement in clinical trials: historical perspective and future implications. *Pharm Pract (Granada)*. 2016; 14:708.
- 9. Sex-Specific Reporting of Scientific Research: A Workshop Summary. Institute of Medicine (US) Board on Population Health and Public Health Practice. Washington, DC: National Academies Press (US); 2012.
- Clayton JA, Tannenbaum C. Reporting sex, gender, or both in clinical research? *JAMA*. 2016;316:1863–1864.
- Scully EP, Gandhi M, Johnston R, et al. Sexbased differences in HIV-1 reservoir activity and residual immune activation. *J Infect Dis.* 2019;219:1084–1094.
- Klein SL, Flanagan KL. Sex differences in immune responses. *Nat Rev Immunol.* 2016; 16:626–638.
- Patterson KB, Prince HA, Kraft E, et al. Penetration of tenofovir and emtricitabine in mucosal tissues: implications for prevention of HIV-1 transmission. *Sci Transl Med.* 2011;3:112re114.
- Cottrell ML, Yang KH, Prince HM, et al. A translational pharmacology approach to predicting outcomes of preexposure prophylaxis against HIV in men and women using tenofovir disoproxil fumarate with or without emtricitabine. J Infect Dis. 2016;214:55–64.
- 15. Johnston R, Pinyakorn S, Ananworanich J. Is there gender bias in HIV cure research? A case study of female representation at the 2015 HIV

Persistence Workshop. J Virus Erad. 2016;2: 117–120.

- Das B, Dobrowolski C, Luttge B, et al. Estrogen receptor-1 is a key regulator of HIV-1 latency that imparts gender-specific restrictions on the latent reservoir. *Proc Natl* Acad Sci U S A. 2018;115:E7795–E7804.
- Grewe ME, Ma Y, Gilbertson A, et al. Women in HIV cure research: multilevel interventions to improve sex equity in recruitment. *J Virus Erad.* 2016;2:49–51.
- Institute of Medicine (US) Board on Population Health and Public Health Practice. Sex-Specific Reporting of Scientific Research: A Workshop Summary. Washington, DC: National Academies Press (US); 2012. Implications for Journals of Sex-specific Reporting Policies of Journals. Available at: https:// www.ncbi.nlm.nih.gov/books/NBK84187/. Accessed March 15, 2019.



Bridging the Gap: Reaching Men for HIV Testing Through Religious Congregations in South Africa

To the Editors:

### INTRODUCTION

HIV testing services are the critical first step to enrolling people into HIV treatment and being an important aspect of HIV prevention efforts.<sup>1</sup> However, South African men have consistently been found to test for HIV at lower rates than women.<sup>2–4</sup> Data from the 2017 National HIV Prevalence, Incidence, Behavior and Communication Survey, for example, indicate that 78% of HIVpositive men and 89% of HIV-positive women know their HIV status.<sup>5</sup>

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Orr et al<sup>4</sup> found in focus group discussions that men reported lower levels of participation in HIV testing for 3 main reasons: fear of damaging their reputations and losing their sense of masculine pride; fear of the potential for community rejection; and fear of a loss of emotional control resulting from the psychological burden of knowing one was HIV-positive. There is therefore a clear need to develop interventions that increase HCT uptake among South African men if the UNAIDS 90-90-90 targets for the HIV program are to be met by 2020.3 One under-researched means of improving men's access to HCT is through involving religious leaders (RLs) in promoting HIV testing in their congregations and communities. Church involvement in the response to the HIV epidemic in southern Africa has tended to be on prevention messaging, counseling, and support and care for those infected and affected by the disease.<sup>6,7</sup> There is little evidence of individual churches or congregations directly participating in implementing HTS. Some evidence exists of the potential role of churches in encouraging member to test for HIV; Eriksson et al<sup>8</sup> found that youth in faith communities that receive higher levels of education on HIV prevention are more likely to test for HIV. In Philadelphia in the United States, Stewart et al examined the feasibility of conducting HIV testing at churches and found that churches provide a "trust and culturally responsive venue for HIV testing and linkage to care."9 Similarly, Ezeanolue et al found that a culturally adapted church-based intervention focusing on PMTCT uptake in Nigeria successfully increased HIV testing during pregnancy. In Tanzania, educating RLs about male circumcision resulted in a much higher uptake of services.<sup>10</sup> Churches, therefore, seem to provide a potentially useful platform for increasing access to HTS and HIV prevention services. Given that 86% of South Africans report Christianity as their religious affiliation, with 52% reporting at least weekly attendance of religious services and ceremonies, this potential needs to be explored.<sup>11</sup>

This article explores the role of a 3phase intervention conducted as partnership between Anova Health Institute and the International Network of Religious

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Leaders Living with or Affected by HIV and AIDS (INERELA+) with churches and RLs in Limpopo Province, South Africa, in increasing HTS uptake and linkage to care among male church members.

### METHODS

This research was conducted in rural Mopani District of Limpopo Province, South Africa, and involved the assessment of the HTS intervention using routine program data. The intervention involved the capacitation of RLs through a 3-day training course focusing on improving RLs' knowledge about HIV and HIV transmission; their skills in discussing HIV in their congregations and communities; their attitudes toward HIV and people living with HIV; and their project planning skills. Churches in the district were identified through engagement with local nongovernmental organizations (NGOs) and primary healthcare centers; RLs from a total of 47 churches were trained.

After the training, RLs continued to be mentored by INERELA+ and Anova project staff as they began to discuss HIV in their church services. This phase also included the recruitment of 2 "champions" tasked with raising awareness about HIV testing among men in the local community and a health care worker tasked with supporting the recruitment of individuals to get tested.

Finally, RLs collaborated with Anova staff to hold HTS campaigns at their individual churches during which RLs discussed HIV during a church service and encouraged church members to get tested. Individuals who tested positive during the HTS campaign were proactively linked to care. A total of 27 churches with an estimated attendant population of 5250 individuals over a 15-month period (August 2016–November 2017) implemented the final phased of the intervention.

Sex- and age-disaggregated routine operational data were collected using paper registers. A descriptive analysis was used to assess the uptake of HTS among church attendees where the model was implemented. Absolute numbers with proportion and median with range are reported.  $\chi^2$  test was used to test bivariate associations between HIV testing and biological sex, and HIV positivity and biological sex.

## RESULTS

A total of 1971 individuals attended church services on designated HTS campaign days. Of these, 1416 (72%) were women and 555 (28%) were men (Table 1). The median age of attendees was 32 years.

Overall uptake of HIV testing was 43%, with HTS uptake among men (52%) being significantly higher than among women (40%; P < 0.001). A higher proportion of men (35%) than women (18%; P < 0.001) were first time testers. The proportion of men and women testing positive for HIV was similar (2.1% vs 3.7%; P = 0.21), and in a similar range to other community-based testing modalities in the region. In terms of age, men who tested HIV-positive were all older than 40 years (median 50 years; range 41–64

	Men (N, %)	Women (N, %)	Total (%)
Attended	555 (28)	1416 (72)	1971 (100)
Tested for HIV	287 (52)*	569 (40)	856 (43)
Aged <35 yrs	158 (55)	245 (43)	403 (47)
Aged >35 yrs	129 (45)	324 (57)	453 (53)
First Time Testers	100 (35)*	102 (18)	202 (24)
Aged <35 yrs	75 (75)	74 (73)	149 (61)
Aged >35 yrs	25 (25)	28 (27)	53 (39)
Tested HIV-Positive	6 (2.1)	21 (3.7)	27 (3.2)
Aged <35 yrs	0	11 (52)	11 (41)
Aged >35 yrs	6 (100)	10 (48)	16 (59)

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years). All participants testing positive for HIV were linked to local health services.

#### DISCUSSION

Working with RLs to bridge the gap between churches and HIV services proved to be successful in reaching men and older men, in particular, for HCT. The relatively large proportion of first time testers also shows that a fairly unique population in terms of access to HIV services was reached through the partnership. This is a potentially important finding because research on HIV testing rates in South Africa has repeatedly found that men test at lower rates than women, and that older men are especially difficult to reach with HIV prevention services.<sup>2–4</sup>

Campbell et al<sup>12</sup> note that religion is a significant social force in Africa, and that churches and RLs can play a key role in either facilitating or hindering the creation of supportive social spaces in which to address HIV. The central role of religion in the lives of many Africans also means that the ways that RLs discuss issues such as HIV/AIDS, risk behavior, and sexuality can have important effects on their congregants' beliefs and attitudes toward HIV prevention.<sup>6,9</sup>

In the case of this intervention, the decision to work directly with RLs seems to have been appropriate in creating an enabling environment for men to access HTS. It is possible that the perceived authority of RLs and their ability to integrate information about health into their sermons using biblical references contributed to encouraging men in their congregation to participate in HTS. The fact that 35% of men (Table 1) who tested for HIV during the intervention were first time testers suggests that this approach has the potential to reach a population that has historically been difficult to access.

There are limitations to this research that need to be acknowledged. First, the lack of a control group and the use of routine data means that we are unable to report what would have happened in the absence of the intervention, or whether there were other factors that could have affected HTS uptake. Second, the nonrandom nature of our sample means that our results are not generalizable to any extent. Third, participants may have been reluctant to reveal previous HIV tests, and hence, some might have been incorrectly counted as first time testers. Finally, although not impossible, we did not observe any signs that the RLs' position authority led to coercion of individuals to test for HIV. Despite these limitations, this research does suggest the potential usefulness of this model of actively engaging RLs in HIV prevention efforts, and more in-depth research is warranted.

Religious institutions and faithbased organizations (FBOs) remain an important aspect of the response to the HIV epidemic in Africa and South Africa and could potentially play a significant role in reaching populations with low levels of uptake of HTS. The 3-phase approach to working with FBOs presented in this article provides an example of a successful intervention that managed to reach a population of older men who have historically low levels of HCT participation. There is therefore a clear need for further research into the ways that FBOs can support the ongoing response to HIV in South Africa. There is also a need for renewed investment in work with FBOs as a potentially effective aspect of the broader HIV response.

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#### REFERENCES

1. Hall HI, Holtgrave DR, Maulsby C. HIV transmission rates from persons living with

HIV who are aware and unaware of their infection. *AIDS*. 2012;26:887-896.

- Johnson LF, Rehle TM, Jooste S, et al. Rates of HIV testing and diagnosis in South Africa: successes and challenges. *AIDS*. 2015;29:1401–1409.
- Makusha T, Mabaso M, Richter L, et al. Trends in HIV testing and associated factors among men in South Africa: evidence from 2005, 2008 and 2012 national populationbased household surveys. *Public Health*. 2016;143:1–7.
- Orr N, Hajiyiannis H, Myers L, et al. Development of a National Campaign Addressing South African Men's Fears About HIV Counseling and testing and antiretroviral treatment. *J Acquir Immune Defic Syndr.* 2017;74:69–73.
- Human Sciences Research Council (HSRC). The Fifth South African National HIV Prevalence, Incidence, Behaviour and Communication Survey, 2017: HIV Impact Assessment Summary Report. Cape Town: HSRC Press; 2017.
- Ochillo MA, Van Teijlingen E, Hind M. Influence of faith-based organisations on HIV prevention strategies in Africa: a systematic review. *Afr Health Sci.* 2017;17:753–761.
- Simpson D. "Bringing back hope": how faithbased responses to HIV and AIDS differ from secular responses. *Afr J AIDS Res.* 2018;17: 175–182.
- Eriksson E, Lindmark G, Haddad B, et al. Young people, sexuality, and HIV prevention within Christian Faith Communities in South Africa: a cross-sectional survey. *J Religion Health.* 2014;53:1662–1675.
- 9. Downs JA, Mwakisole AH, Chandika AB, et al. Educating religious leaders to promote uptake of male circumcision in Tanzania: a cluster randomised trial. *Lancet.* 2017;378: 1124–1132.
- Stewart J, Thompson K, Rogers C, et al. African American church-based HIV testing and linkage to care: assets, challenges and needs. *Cult Health Sex.* 2016;18:669–681.
- StatsSA. General Household Survey, 2015. Vol. P0318. Pretoria, South Africa: Statistics South Africa; 2016. Available at: http://www. statssa.gov.za/publications/P0318/P03182015. pdf. Accessed December 11, 2018.
- Campbell C, Skovdal M, Gibbs A. Creating social spaces to tackle AIDS-related stigma: reviewing the role of church groups in subsaharan Africa. *AIDS Behav.* 2011;15: 1204–1219.

# How Language Hides Violence Against Girls

#### To the Editors:

We ask whether language used routinely by the HIV community reveals underlying values and assumptions.

"Behavior": Becker et al<sup>1</sup> investigated the first sexual experiences of sexually active 14- to 24-year-old girls living in Kenya. This important research contributes a deeper understanding of the established connection between HIV risk and gender-based violence.<sup>2</sup> The characteristics of first sexual experience predict later risk of HIV; increased when first sexual experience occurs before age 15, before or within a year of menarche, or in exchange for money or gifts.<sup>1</sup>

The authors focus on "biological, behavioral, and structural factors," stating that the difference in condom use at first sexual experience is "behavioral," rather than structural.<sup>1</sup> When an uneven power dynamic is crystal clear, "behaviour" may unhelpfully imply equal agency between the 2 parties. Over one-quarter (28%) of study participants were younger than 15 years at first sexual experience and more than twofifths (44%) of first sexual experiences took place within the context of payment or exchange. Short and Melbourne's model of social determinants of health behaviors includes "micro" (behavioral and biological) and "macro" (structural) but added "meso"-level factors within "the proximate settings in which people live their lives" including interpersonal interactions within neighborhoods and families.<sup>3</sup> This level between societal and individual, where pressure from local people operates, problematizes the choice-force dichotomy and illuminates the mechanism mediating elevated HIV risk among younger women whose first sexual experience is transactional or paid. Typically, under these circumstances, the man decides whether to use a condom, not the girl.

"Early Sexual Debut": This term is similarly unhelpful although used elsewhere.4 "Debut" has overtones of achievement (in sport or the arts), the culmination of extensive training, and the hopeful beginning of a career. "Early" has a ring of being better than "late." Far from being vibrant, exploratory behavior with adolescent peers, the authors report that 41% of first sexual experiences were coerced, 11% involved force, and 60% were arranged by somebody other than the girl herself with many of the men being older (7% more than 10 years older). These phenomena can accurately be conceptualized as

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