

An Examination of the Relationship between Sexual Orientation and Health Status among South African Public Educators

Karl Peltzer^{1,2,3}

¹*Human Sciences Research Council, Pretoria, South Africa*

²*Department of Psychology, University of Limpopo, Turfloop, South Africa*

³*ASEAN Institute for Health Development, Mahidol University, Salaya, Thailand*

KEYWORDS Gay. Lesbian. Bisexual. Health Outcomes. Chronic Conditions. Mental Distress. HIV Status. Teachers. National Survey. South Africa

ABSTRACT The aim of this study was to investigate sexual orientation and health related outcomes in South African public educators. A cross-sectional study design involving a national probability sample of 1 766 schools was used. The overall study included 21 307 educators, but in this sample only 16877 who indicated that they had been sexually active in the past 12 months were included. Results indicate that of sexual orientation, 95.5 percent of the men were heterosexual, 4.6 percent gay and 0.7 percent bisexual, and 98.8 percent of the women were heterosexual, 0.9 percent lesbian and 0.5 percent bisexual. Compared with heterosexual people, gay, lesbian and bisexual people were not significantly more often HIV positive, did not have more often heart disease, stomach ulcer, asthma, mental distress and substance use. However, Lesbians reported more frequently hypertension than heterosexuals and gay or lesbian or bisexual people reported more often diabetes than heterosexual persons.

INTRODUCTION

The elimination of health disparities in public health has been documented in various fields such as socio-demographic factors (gender, ethnicity) and economic status, while less is known on disparities by sexual orientation (Ward et al. 2014). Some studies have shown that compared to heterosexual adults, sexual minorities (gay, lesbian, bisexual) have poorer health outcomes such as 1) poorer physical health (Sandfort et al. 2006; Dilley et al. 2010; Elliott et al. 2015), chronic conditions (Sandfort et al. 2006), Asthma (Dilley et al. 2010), diabetes (Dilley et al. 2010), and overweight (Dilley et al. 2010), 2) poorer mental health (Jorm et al. 2002; Plöderl et al. 2006; Sandfort et al. 2006; Brennan et al. 2010; Dilley et al. 2010; Bolton and Shareen 2011; Kuyper and Fokkema 2011; Elliott et al. 2014; Matthews and Lee 2014; Ward et al. 2014), suicidality (Plöderl et al. 2006; Bolton and Shareen 2011; Almazan et al. 2014), 3) substance use disorders (Bolton and Shareen 2011), smoking (Dilley et al. 2010; Blosnich et al. 2011; Boehmer et al. 2012; Matthews and Lee 2014; Ward et al. 2014), drinking excess alcohol (Dilley et al. 2010; Bloomfield et al. 2011; Boehmer et al. 2012; Ward et al. 2014), and 4) sexually transmitted infections, including HIV (Brennan et al. 2010; Rispel et al. 2011; Cao et al. 2012).

Seeking to address these health disparities of sexual minority population-based data are

needed using a set of sexual orientation and health indicator questions (Ward et al. 2014). There is a lack of studies in South Africa investigating sexual orientation and health related outcomes. Kuyper and Fokkema (2011) note that minority stress is often cited as an explanation for greater health problems among lesbian, gay, and bisexual (LGB) individuals than heterosexual individuals. However, studies focusing on sex or sexual orientation differences in level of minority stress and its impact on health are scarce, even more so outside the United States.

Objectives

The objectives of this study are to present population distributions among public educators of sexual orientation and examine prevalence rates of select health indicators across sexual orientation groups.

METHODS

Sample and Procedure

A cross-sectional study design involving a national probability sample of 1 766 schools was used. In carrying out the study, 1714 (or 97%) schools were found in the field (some apparently did not exist) or agreed to participate (Shisana et al. 2005). Of the target number of educators, 20 626 agreed to participate voluntarily and the

response rate for questionnaires was 97 percent and 83 percent for specimen tested for HIV (Shisana et al. 2005).

Ethical approval for conducting the study was obtained from the Human Sciences Research Council's Ethics Committee (Application Number REC2/20/08/030). Informed consent was obtained separately for agreeing to participate in the interview and for providing a specimen for HIV testing.

Measures

Sexual orientation was assessed among the past 12 months sexually active by asking during the past 12 months did you have sex a) with only a man or men, b) with only a woman or women, and c) with both a man or men and a woman or women; only the sexually active in the past 12 months were included in this study sample.

Stress Related Illnesses or Chronic Conditions: Information about chronic diseases/conditions diagnosed in the past five years (asthma, diabetes, heart disease, hypertension, stomach ulcer) was obtained by self-report.

Alcohol use was assessed with the ten item Alcohol Use Disorder Identification Test (AUDIT) (Babor et al. 2001). Standard drinking units were adjusted to the South African context (one unit 12 g alcohol), and sex differences were included in binge drinking, namely for men five or more and for women four or more drinks on one occasion. Cronbach alpha for the AUDIT in this sample was 0.78.

Current tobacco use was assessed with the questions: 1) Do you currently use one or more of the following tobacco products (cigarettes, snuff, chewing tobacco, cigars, etc.)? Response options were "yes" or "no". 2) In the past month, how often have you used one or more of the following tobacco products (cigarettes, snuff, chewing tobacco, cigars, etc.)? Response options were once or twice, weekly, almost daily and daily (WHO 1998).

Mental distress was measured with one item from the CDC Health Related Quality of Life (HRQOL-4) including the question of reporting the number of days during the previous 30 days in which the respondent's mental health was not good. The sum of the measure results in the total number of "mentally distressed days" (ranging from 0 to 30 days). In this study 7 to 13

days of being mentally distressed in the past month was classified as minor mentally distressed and 14 days and more as major mentally distressed. The CDC Health Related Quality of Life (HRQOL-4) measure had an acceptable test-retest reliability and strong internal validity in a representative sample in the US (Andresen et al. 2003).

HIV Testing: "Blood specimens were tested for HIV on the Abbott AXSYM third generation HIV 1 / 2 g0 testing system. Oral fluid specimens were obtained by using the 'Orasure' oral fluid collection device and these specimens were tested using the Vironostika HIV Uni-Form II Oral Fluid testing system." (Shisana et al. 2005: 20)

Socio-demographic variables such as sex, race, age group, urban/rural, living arrangement, marital status and income and education were obtained through a self-reported questionnaire.

Data Analysis

Data analysis was performed using STATA software version 11.0 using *svy* commands (Stata Corporation, College Station, Texas, USA). The analysis in STATA took into account the multilevel stratified cluster sample design of the study. Regression models are used to investigate differences in health outcomes, according to sexual orientation. Predictor variables included sexual orientation (dummy coded with heterosexual as the reference category), age, gender and urban or rural residence.

RESULTS

Sample Characteristics

The overall study included 21 307 educators, but in this sample only 16877 who indicated that they had been sexually active in the past 12 months were included. By sexual orientation, 95.5 percent of the men were heterosexual, 4.6 percent gay and 0.7 percent bisexual, and 98.8 percent of the women were heterosexual, 0.9 percent lesbian and 0.5 percent bisexual (see Table 1).

HIV Status and Stress Related Illnesses or Chronic Conditions

By self-report 15.7 percent indicated to have been diagnosed with hypertension, 9.3 percent with a stomach ulcer, 4.2 percent diabetes, 3.6

Table 1: Demographic characteristics by sexual orientation of educators

	<i>Heterosexual</i> (<i>n</i> =16468)		<i>Men</i>	<i>Women</i>	<i>Gay</i> (<i>n</i> =227)		<i>Lesbian</i> (<i>n</i> =79)		<i>Bisexual</i> (<i>n</i> =99)		<i>Gay/Lesbian/Bisexual</i> (<i>n</i> =369)	
	<i>Total</i>				<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
	<i>N</i>	<i>%</i>	<i>%</i>	<i>%</i>								
Men	5728	95.5			227	4.6			44	0.7	269	4.5
Women	10740	98.8					79	0.9	55	0.5	127	1.2
Total	16468	97.7							99	0.6	396	2.3
Mean age, yrs (SD)	39.9 (7.7)		39.7 (7.8)	39.9 (7.7)	41.3 (8.0)		39.4 (7.2)		39.9 (8.4)		40.6 (8.0)	
Black African	11657	97.5	72.6	70.1	174	4.8	54	0.9	82	0.7	304	2.5
White	2113	98.2	8.4	15.2	7	6.2	12	0.9	4	0.2	39	1.8
Coloured	2149	98.1	15.5	11.8	20	3.0	11	0.8	13	0/6	42	1.9
Indian or Asian	514	98.5	3.4	3.0	24	3.7	1	0.3	0	0	8	1.5
Primary school	8801	53.4	40.5	60.3	119	52.4	42	53.2	48	48.5	203	51.3
Combined/intermediary	2664	16.2	16.6	15.9	46	20.3	12	15.2	11	11.1	67	31.8
Secondary	5016	30.4	42.9	23.8	62	27.3	25	31.6	40	40.4	126	16.9
Married	11502	70.0	72.7	68.6	161	71.0	52	61.5	72	72.7	278	70.6
Single	3811	23.2	22.6	23.5	56	24.6	15	21.9	23	23.2	94	23.6
Separated/divorced	754	4.6	3.2	5.3	6	3.0	6	10.7	2	2.0	14	3.6
Cohabiting	97	0	0.8	0.5	2	1.2	1	1.6	0	0	3	0.8
Widower/widow	271	1.6	0.6	2.2	1	0.2	4	4.3	2	2.0	6	1.5
Living arrangement												
Alone	1475	0.0	11.2	7.8	19	8.4	9	11.4	8	8.1	36	9.1
With family relatives	7498	45.8	42.5	47.6	109	48.0	41	51.9	44	44.4	188	47.5
With partner/husband/wife	7271	44.4	45.3	43.9	95	41.9	29	36.7	46	46.5	167	42.2
With peers/friends/ co-workers	132 1	0.8 0	1.0 0	0.7 0	4 0	1.8 0	0 0	0 1	1 1.0	5 1.3		
Geolocality of residence	10015	60.9	59.2	61.8	132	58.4	50	63.3	40	40.4	215	54.4
Urban Non-urban/rural	6425	39.1	40.8	38.2	94	41.6	29	36.7	59	59.6	180	45.6

percent asthma, 4.1 percent scored minor mental distress and 3.8 percent major mental distress. In terms of substance use, 11.3 percent indicated to daily or almost daily tobacco use and 5.4 percent

were hazardous or harmful alcohol users. Overall, 12.0 percent were found to be HIV positive; this was higher, but not significantly, among gay, lesbian and bisexual educators (see Table 2).

Table 2: Prevalence of HIV and stress related illnesses by sexual orientation

	<i>Homosexual</i> <i>Total</i>		<i>Men</i>	<i>Women</i>	<i>Gay</i>		<i>Lesbian</i>		<i>Bisexual</i>		<i>Gay/Lesbian/ Bisexual</i>	
	<i>N</i>	<i>%</i>			<i>N</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>N</i>	<i>%</i>
	<i>N</i>	<i>%</i>	<i>%</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>N</i>	<i>%</i>
HIV positive	1657	12.0	11.8	12.2	26	13.9	10	17.2	11	13.3	46	14.3
Hypertension	2555	15.7	14.2	16.2	25	11.3	19	24.7	13	13.1	56	14.4
Heart disease	307	1.9	1.9	1.9	6	2.7	1	1.4	1	1.0	8	2.1
Diabetes	683	4.2	5.1	3.8	10	4.5	6	8.1	8	8.1	24	6.2
Stomach ulcer	1503	9.3	8.5	9.7	10	4.5	7	9.6	11	11.1	27	7.0
Asthma	586	3.6	2.3	4.4	4	1.8	3	4.2	6	6.1	13	3.4
Minor mental distress	680	4.1	3.1	4.7	12	5.3	2	2.5	4	4.0	18	4.5
Major mental distress	633	3.8	2.9	4.4	10	4.4	1	1.3	3	3.0	14	3.5
Tobacco use (daily/almost daily)	1861	11.3	21.7	5.5	30	13.2	7	8.9	12	12.1	48	12.1
Hazardous or harmful drinkers	876	5.4	14.0	0.6	14	6.2	3	3.9	7	7.1	23	5.9

Association of Health Outcomes and Sexual Orientation

Compared with heterosexual people, gay, lesbian and bisexual people were not significantly more often HIV positive, did not have more often heart disease, stomach ulcer, asthma, mental distress and substance use. However, lesbians reported more frequently hypertension than heterosexuals and gay or lesbian or bisexual people reported more often diabetes than heterosexual persons (see Table 3).

DISCUSSION

This study found in a large, nationally representative sample of public educators in South Africa a prevalence of gay of 4.6 percent, lesbian 0.9 percent and bisexuals among men 0.7 percent and among women, 0.5 percent, which is similar to 1.5 percent to 3 percent found in most mental health surveys (Jorm et al. 2002), and a recent national US adult survey where 1.6 percent identified as gay or lesbian, and 0.7 percent identified as bisexual (Ward et al. 2014). This finding seems to show a lower prevalence of sexual minorities than in a previous study among university students in South Africa, with 7 percent homosexual women and 3 percent homosexual men (Træen et al. 2009).

This study found only two differences in physical health (hypertension and diabetes) in relation to sexual orientation. This finding is conforming to other studies showing that poorer physical health (Sandfort et al. 2006; Dilley et al. 2010; Elliott et al. 2014), chronic conditions (Sandfort et al. 2006) and diabetes (Dilley et al. 2010) were associated with sexual minorities.

Unlike in many other studies (Jorm et al. 2002; Plöderl et al. 2006; Sandfort et al. 2006; Brennan et al. 2010; Dilley et al. 2010; Bloomfield et al. 2011; Blosnich et al. 2011; Bolton and Shareen 2011; Kuyper and Fokkema 2011; Boehmer et al. 2012; Elliott et al. 2014; Ward et al. 2014) poorer mental health and substance use were in this study not found to be associated with sexual minorities. It was also not found, as in some other studies (Baral et al. 2007) that HIV infection was significantly higher in sexual minority than in heterosexual educators. The largely absence of differences in health outcomes found in this study might be the result from a social climate in South Africa that is relatively accepting of sexual minorities. Sexual orientation should be recognized as a social determinant of health (Horner and Roberts 2014). The reported sexual orientation data and their health correlates provide crucial data for health care planning.

CONCLUSION

The study found a low prevalence of sexual minorities in this large sample of public educators in South Africa. Sexual minority status was associated with two chronic conditions, but not with mental distress, substance use and HIV infection. It is important to identify health disparities among sexual minorities in order to plan health interventions.

RECOMMENDATIONS FOR FUTURE STUDIES

Future studies should investigate at a population level sexual orientation, including various

Table 3: Multiple logistic regression analysis of health outcomes by sexual orientation

Variable	AOR ^a CI, 95% Gay	AOR ^a CI, 95% Lesbian	AOR ^a CI, 95% Bisexual	AOR ^a CI, 95% Gay/Lesbian/ Bisexual
HIV positive	1.08 (0.86-1.35)	1.20 (0.94-1.53)	0.98 (0.81-1.18)	1.09 (0.91-1.30)
Hypertension	0.82 (0.64-1.05)	1.22 (1.00-1.47)*	0.90 (0.77-1.06)	0.95 (0.80-1.12)
Heart disease	1.33 (0.86-2.06)	0.66 (0.34-1.27)	0.88 (0.54-1.45)	0.96 (0.65-1.42)
Diabetes	0.96 (0.68-1.37)	1.21 (0.88-1.67)	1.18 (0.96-1.45)	1.28(1.02-1.60)*
Stomach ulcer	0.73 (0.51-1.03)	1.03 (0.77-1.37)	0.99 (0.83-1.17)	0.92 (0.74-1.15)
Asthma	0.69 (0.38-1.26)	1.17 (0.78-1.74)	1.08 (0.85-1.38)	1.09 (0.82-1.46)
Minor mental distress	1.23 (0.91-1.68)	0.96 (0.60-1.53)	0.96 (0.74-1.24)	1.04 (0.82-1.33)
Major mental distress	1.07 (0.75-1.52)	0.68 (0.35-1.32)	0.94 (0.69-1.28)	0.90 (0.65-1.23)
Tobacco use (daily/almost daily)	1.15 (0.92-1.43)	0.92 (0.68-1.24)	1.07 (0.91-1.25)	1.10 (0.92-1.30)
Hazardous or harmful drinkers	1.11 (0.84-1.45)	0.96 (0.68-1.35)	1.07 (0.87-1.30)	1.09 (0.87-1.37)

Adjusted Odds Ratio=AOR; Confidence Interval=CI

*P<.05; *After controlling for gender, age, and residence

health indicators such as health risk behaviours, suicidality and health care access.

LIMITATIONS

The interpretation of the findings is limited by various factors. The samples of bisexual and gay/lesbian persons were relatively small, limiting power to detect group differences in health outcomes. Another limitation relates to the assessment of sexual orientation. The interpretation of the specific question might differ between age cohorts. As this survey is cross-sectional no causal conclusions can be drawn. In addition, the self-report of the variables assessed in the survey may be influenced by social desirability bias. Several variables relating to health outcomes in sexual minorities were not assessed in this study such as overweight should be assessed in future studies.

ACKNOWLEDGMENTS

The Education Labour Relations Council is thanked for commissioning, supporting and funding this study. Theo Sandfort is thanked for his input in the analysis design.

REFERENCES

- Almazan EP, Roettger ME, Acosta PS 2014. Measures of sexual minority status and suicide risk among young adults in the United States. *Arch Suicide Res*, 18(3): 274-281.
- Andresen EM, Catlin TK, Wyrwich KW, Jackson-Thompson J 2003. Retest reliability of surveillance questions on health related quality of life. *J Epi and Com Health*, 57(5): 339-343.
- Babor TF, Higgins-Biddle JC, Saunders JB, Monteiro MG 2001. *AUDIT: The Alcohol Use Disorders Identification Test- Guidelines for Use in Primary Care*. Geneva: World Health Organization, Department of Mental Health and Substance Dependence.
- Baral S, Sifakis F, Cleghorn F, Beyrer C 2007. Elevated risk for HIV infection among men who have sex with men in low-and middle-income countries 2000-2006: A systematic review. *PLoS Medicine*, 4: 1901-1911.
- Bloomfield K, Wicki M, Wilsnack S, Hughes T, Gmel G 2011. International differences in alcohol use according to sexual orientation. *Subst Abuse*, 32(4): 210-219.
- Blosnich JR, Jarrett T, Horn K 2011. Racial and ethnic differences in current use of cigarettes, cigars, and hookahs among lesbian, gay, and bisexual young adults. *Nicotine Tob Res*, 13(6): 487-491.
- Boehmer U, Miao X, Linkletter C, Clark MA 2012. Adult health behaviors over the life course by sexual orientation. *Am J Public Health*, 102(2): 292-300.
- Bolton SL, Sareen J 2011. Sexual orientation and its relation to mental disorders and suicide attempts: findings from a nationally representative sample. *Can J Psychiatry*, 56(1): 35-43.
- Brennan DJ, Ross LE, Dobinson C, Veldhuizen S, Steele LS 2010. Men's sexual orientation and health in Canada. *Can J Public Health*, 101(3): 255-258.
- Cao Z, Zhang HB, She M, Wang J, Xu J, Duan YW, Song DD, Wang M, Dong ZX 2012. Prevalence of HIV infection and sexual behaviors with both men and women among currently married men who have sex with men. *Zhonghua Liu Xing Bing Xue Za Zhi*, 33(5): 488-491.
- Deputy NP, Boehmer U 2014. Weight status and sexual orientation: Differences by age and within racial and ethnic subgroups. *Am J Public Health*, 104(1): 103-109.
- Dilley JA, Simmons KW, Boysun MJ, Pizacani BA, Stark MJ 2010. Demonstrating the importance and feasibility of including sexual orientation in public health surveys: Health disparities in the Pacific Northwest. *Am J Public Health*, 100(3): 460-467.
- Elliott MN, Kanouse DE, Burkhart Q, Abel GA, Lyratzopoulos G, Beckett MK, Schuster MA, Roland M 2015. Sexual minorities in England have poorer health and worse health care experiences: A national survey. *J Gen Intern Med*, 5: 30(1): 9-16.
- Horner J, Roberts NJ 2014. Time to recognise sexual orientation as a social determinant of health. *Med J Aust*, 200(3): 137.
- Jorm AF, Korten AE, Rodgers B, Jacomb PA, Christensen H 2002. Sexual orientation and mental health: Results from a community survey of young and middle aged adults. *Br J Psychiatry*, 180: 423-427.
- Kuyper L, Fokkema T 2011. Minority stress and mental health among Dutch LGBs: Examination of differences between sex and sexual orientation. *J Couns Psychol*, 58(2): 222-233.
- Matthews DD, Lee JG 2014. A profile of North Carolina lesbian, gay, and bisexual health disparities, 2011. *Am J Public Health*, 104(6): e98-e105.
- Plöderl M, Sauer J, Fartacek R 2006. Suizidalität und psychische Gesundheit von homo- und bisexuellen Männern und Frauen: Eine metaanalyse internationaler Zufallsstichproben. *Verhaltenstherapie und Psychoziale Praxis*, 38(2): 283-302.
- Rispel LC, Metcalf CA, Cloete A, Reddy V, Lombard C 2011. HIV prevalence and risk practices among men who have sex with men in two South African cities. *J Acq Immune Defic Synd*, 57(1): 69-76.
- Sandfort TGM, Bakker F, Schellevis FG, and Vanwesenbeeck I 2006. Sexual orientation and mental and physical health status: Findings from a Dutch population survey. *Am J Public Health*, 96: 1119-1125.
- Shisana O, Peltzer K, Zungu-Dirwayi N, Louw J 2005. *The Health of Our Educators: A Focus on HIV/AIDS in South African Schools*. Cape Town: Human Sciences Research Council Press.
- Træen B, Martinussen M, Vittersø J 2009. Sexual orientation and quality of life among university students from Cuba, Norway, India, and South Africa. *J Homosexuality*, 56: 655-669.
- Ward BW, Dahlhamer JM, Galinsky AM, Joestl SS 2014. Sexual orientation and health among U.S. adults: National Health Interview Survey, 2013. *Natl Health Stat Report*, 77: 1-12.
- World Health Organization (WHO) 1998. *Guidelines for Controlling and Monitoring the Tobacco Epidemic*. Geneva, Switzerland: WHO.