



## HEGEMONIC MASCULINITY AND RISKY SEXUAL BEHAVIOURS IN KWAZULU-NATAL, SOUTH AFRICA

Ronald Byaruhanga<sup>1</sup>, Lena Andersson<sup>2</sup> and Kaymarlin Govender<sup>3</sup>

<sup>1</sup>Department of Social Work, University of Gothenburg, Sweden  
Email: gusbyaro@student.gu.se, Tel: +46 (0)765603724

<sup>2</sup>Department of Social Work, University of Gothenburg, Sweden  
Email: socarb@socwork.gu.se; Fax: 031-786 1888

<sup>3</sup>Health Economics and HIV/AIDS Research Division, University of KwaZulu-Natal,  
South Africa.  
Email: Govenderk2@ukzn.ac.za, Tel: +27 (0)31 260 2592, Fax: 27 (0)31 260 2587

**ABSTRACT:** *This study assessed the relationship between hegemonic masculinity and HIV risky behaviours among men in Umgungundlovu district, Kwazulu-Natal, South Africa. **Methodology:** The data was collected through a cross-sectional survey where 10,000 households were approached using a structured questionnaire, but only 3,895 men were considered for this study due to data completeness. Both descriptive and regression analyses were employed in data analysis using Stata 16. **Results:** The largest group of participants were aged 20-24 years (23%), had incomplete education (50%), no income (60%), always lived in the community (62.5%), were not away from home (91.7%), and were separated but still legally married (85.4%). In the regression analysis, only sex after drinking ( $\beta=0.54$ ,  $P=0.025$ ) and non-use of condoms ( $\beta=-0.37$ ,  $P=0.005$ ;  $\beta=-0.48$ ,  $P=0.004$ ) were significantly associated with masculinity norms. **Conclusion:** Hegemonic masculinity is associated with risky behaviours, incredibly sex after drinking and non-condom use, and safe male circumcision is a modifier to this relationship.*

**KEYWORDS:** Hegemonic Masculinity, HIV, Risky Sexual Behaviours, South Africa.

### INTRODUCTION

Previous research has demonstrated that men and boys experience tremendous social pressure to conform to gendered societal prescriptions that expect them to prove their manliness (Gottert, 2014). Preconceived culturally constructed norms provide a framework through which societal gender structures are configured. For instance, in patriarchal societies, men must exhibit self-reliance, independent-mindedness, and shrewdness towards life challenges to be viewed as a "real man" (Williams & Best, 1990). Moreover, men are not just a product of socially constructed expectations or cultural socialisation but are also active agents in the creation and recreation of dominant masculine norms (Courtenay, 2000). Hence, micro-level power practices play a crucial role in sustaining and reproducing broader configurations of power and inequalities (Pyke, 1996).



## LITERATURE/THEORETICAL UNDERPINNING

### *Men's masculinity as a social construct*

Social constructionism concerns the ways we think about and use categories to structure our experience and analysis of the world (Burgess, 1995). The nurture approach in this theory claim that reality is a composition of socially constructed ideas and categories, rather than a product of genetics or inborn traits. The approach is prominent for its role in providing an understanding of the social transactions between men and women (Bohan, 1993) and these transactions are based on gender stereotypes and what is considered masculine or feminine (Williams & Best, 1990). Such stereotypes create widely shared beliefs about the innate identities of women and men and provide mutual, systematised, usually, dichotomous connotations of gender (Pleck, 1987) and pressure people to adhere to stereotypical beliefs of what is feminine and masculine norms and behaviours (Eagly, 1983 & Bohan, 1993). "According to traditional beliefs and socialisation practices, males need to be moulded into the masculine role; hence, masculinity is not ascribed at birth but achieved through a social construction process" (Philaretou and Allen, 2001, p.9). This form of description (of gender structures) informs the idea of hegemonic masculinity.

### *Hegemonic masculinity and HIV in South Africa*

Hegemonic masculinity refers to "a set of values, established by men in power that functions to include and exclude and organise society in gender-unequal ways" (Jewkes & Morrell, 2012, p. 40). The term "combines several features such as a hierarchy of masculinities, differential access to power among men, and the interplay between men's identity, men's ideas, interactions, power, and patriarchy" (ibid). It places femininities and other forms of masculinity in subordinate positions (Connell, 2013). The underlying notion is that men have more power and authority over women (ibid); which is why it is associated with harmful practices such as men's control over women, violence, and devaluation of women roles and anything of feminine nature (Doucet, 2004 & Sabo, 2000). The nature of relationships between men and women, especially in predominantly patriarchal societies, such as South Africa can be linked to hegemonic masculinity since the social structures (usually) place men in positions of power and control over women. Hitherto, South African society is characterised by a system where men dominate and patronise women. Since sexual prowess (characterised by the number of sexual partners, duration in bed, ingenuity and control over sexual activities) is one way through which men exhibit their virility, men in South Africa tend to behave in risky manners—posing themselves to the precarity of HIV risk and transmission to their primary sexual partners.

In South Africa, HIV is mainly transmitted through heterosexual encounters—where women and girls are considerably at a higher risk of contracting the virus as compared to men and boys (Nattrass, 2008). Perceived male gender supremacy results in men having the power to determine the conditions under which sexual activities are conducted (Gibbs, 2010). Such male-dominated sexual practices increase women's vulnerability to HIV, alongside limiting their possibilities to access HIV prevention and treatment services. Over 20 per cent of the women aged between 15 and 49 years are living with HIV in South Africa (UNAIDS, 2014). Young women have a three times higher risk of being infected with HIV than their male peers (Kiene et al., 2015). Increased susceptibility of women to HIV is linked to men's risky sexual behaviours (Reardon and Govender, 2013). Norms and practices of masculinity that propagate



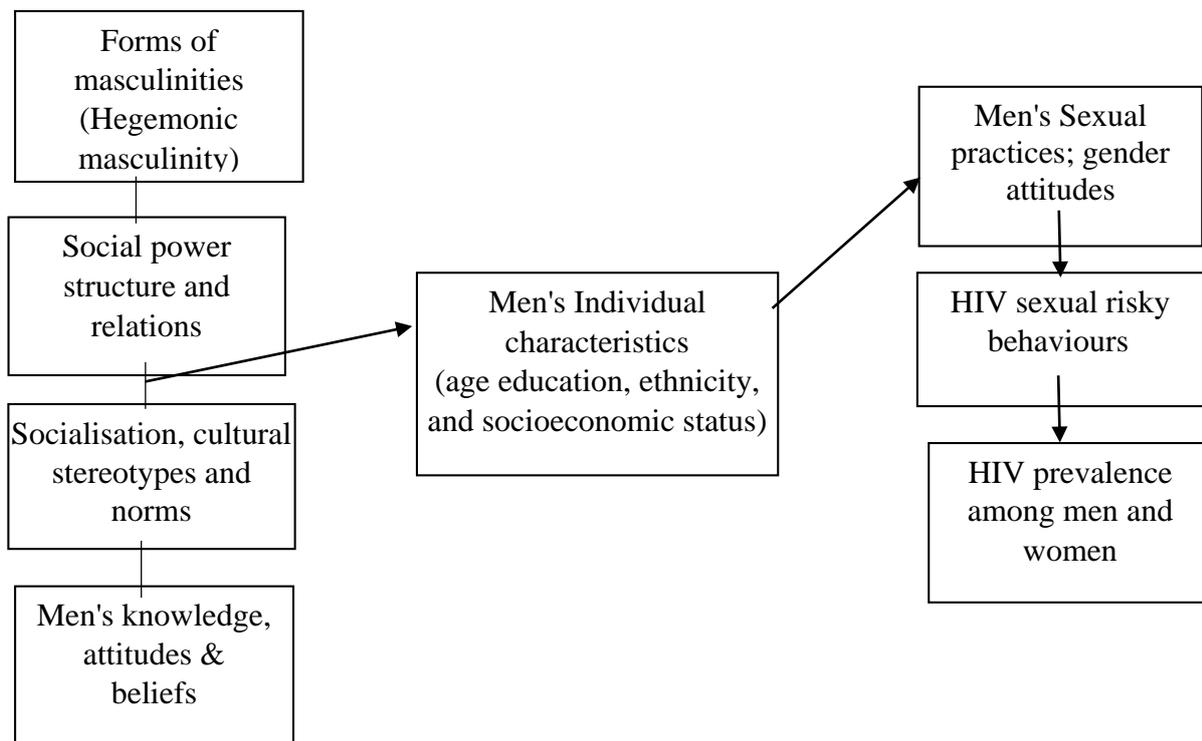
women's oppression by men subject both men and women to the danger of acquiring HIV (UNAIDS, 2008). Such beliefs and expectations of masculinity are a great contributor to men's tendency to engage in unsafe sexual practices, including an unwillingness to negotiate safe sex (Simpson, 2005) with women as well as the increased habit of having multiple sexual relationships (Hunter, 2004). Jewkes and Morrell (2010) point out that men are involved in risky sexual practices, such as unprotected sex, and inconsistent use of condoms and transactional sex. Such practices have contributed much to the exposure of both men and women to the risk of contracting HIV (Bowleg et al., 2015). Men's patronage makes it even riskier for women (Mane & Aggleton, 2001).

### ***The problem***

This study intended to establish the relationship between hegemonic masculinity and HIV risky behaviours among men in two areas, the Vulindlela and the greater Edendale in Kwazulu-Natal, South Africa. The study was inspired by the need to understand the enigma of why, despite massive investment in HIV services, HIV education, free and accessible HIV prevention services, provision anti-retroviral therapy treatment and increased awareness to reduce HIV-related mortality and infection rates, prevalence has remained unacceptably high in South Africa by any standards. In effect, we leveraged on studies that have suggested the high HIV prevalence in South Africa tend to revolve around men's sexual risky practices and the impact of these on the vulnerability of both men and women to HIV (Reardon and Govender, 2013). Although there is substantial evidence confirming the connection between traditional masculinity norms and HIV risk in urban and developed contexts (Moodley & Colvin, 2018), there is scanty evidence on this connection from a rural setting. Therefore, this study examined the impact of men's ascription to traditional norms of masculinity on their level of engagement in sexual risk behaviour in a rural setting in a middle-income country, South Africa.

### ***Conceptual framework***

The creation, maintenance, modification, expression, and the manifestation of masculinities are all reflected in social interactions. Male gender identities and masculinity are found and enshrined in the contextual and cultural environment and social transactions. The framework demonstrates how gender social power relations create and enable masculine norms to thrive in society. This study, as O'Brien et al. (2005), acknowledges the fact that masculinities are manifold, disputed, dynamic and socially constructed, and they are affected by both time and space. There is no one form of masculinity, but masculinities may differ depending on the socio-cultural and historical contexts. Such factors facilitate and uphold certain gender stereotypes that perpetuate certain forms of masculinities. It is understood that men are expected to adhere to specific prefixed gender social roles that, mostly laud maleness. Hence, construct and sustenance of virility are produced through social transactions. The figure below shows the interplay between socio-economic factors, construction of virility and sexual risk



**Figure 1: Conceptual framework: Masculinities and Men's Risky behaviours and its Outcomes**

## METHODS AND DATA

### *Study site and population*

The study was carried out in uMgungundlovu District in two sub-districts of Vulindlela and the adjacent Greater Edendale in the province of KwaZulu-Natal, South Africa. Vulindlela sub-district is approximately 28,000 hectares in extent. The region incorporates habitation in traditional settlements or farmlands, rural settlement, and urban living. This rural community has a population of over 150,000 people and is predominantly Zulu speaking. The Greater Edendale area is the second-largest urban centre within the Kwa-Zulu Natal province and is the central economic hub within the uMgungundlovu District. This route serves not only as a path for economic growth but also as a connection between various outlying rural areas in the north, including Vulindlela to the city. Much of the Greater Edendale area is densely developed with both formal and informal housing, supported by ancillary land uses and facilities in some areas. The current population within the Edendale area is about 210,000 people, which comprises of approximately 36% of the city's population.

### *Sampling of enumeration areas*

The survey applied a two-stage cluster-based sampling of enumeration areas (EA) to randomly select households and recruit a household-representative sample of men and women. The two areas, the Vulindlela and the greater Edendale were included in the study. The EA sampling frame was triangulated from the Census 2011, the 2007 Community survey data (StatSA



Community Survey) together with aerial imaging of dwellings supplied by Geo Terra Image (GTI) to obtain population number of household and persons on EA level. The sampling frame was further adjusted to the 2009-2010 GTI counts, other district council estimates, and StatsSA's released 2011 midyear estimates of population numbers per province, according to the 2009 province boundaries, race, five-year age groups and gender. These EA data were used as the sampling frame and consist of demographic information, estimated population counts of the number of households, number of people as well as numbers per population group, gender and per five-year age interval. The study area consisted of an estimated 95,641 households with a total of 367,906 individuals. Of these, 176,418 and 191,515 were males and females, respectively. A total of 217,278 people were aged between 15 and 49 years, and 164,302 people were aged 15 to 35 years. These age groups informed the recruitment to the cross-sectional and follow-up cohorts, respectively. Sampling continued until 10,000 households were enrolled. Where in case a selected household abandoned or refused to complete the composition form or the members away for an extended period of time, the household on the right side of the selected house when facing the entrance of the selected household would be used as a replacement. All replacement households would be authorised by a supervisor.

### ***Sampling of a household member***

Once a household was selected, a list would be made of all the individuals who resided in the household and met the eligibility criteria for the study. These individuals would be numbered, and the handheld device would randomly select one of these individuals to be included in the study. Only one individual per household was selected and enrolled in the study. In case the selected individual declined to participate, the next individual would be selected. In case the second individual also declined, the household would be replaced. The above-mentioned procedure for household replacement was followed where the household on the right side of the selected when facing the entrance, would be used as a replacement. However, for this study, only men were included in the analysis since the author was only interested in men and masculinity.

### ***Data collection methods and tools***

Data were collected from June 2014 to June 2015 using an interviewer-administered structured questionnaire through a personal digital assistant. The questionnaire consisted of 78 closed ended questions that were asked via a face to face interview. The interviews took place in the respondents' residences and lasted for approximately 1 to 2 hours with the flexibility to make it longer, as necessitated by the circumstances surrounding the interview. Interviews were conducted in either English or Zulu. A household head was targeted to complete a household questionnaire, which elicited the number of individuals living in the household and socio-demographic and economic information of household members. The field interviewers underwent rigorous training on how to approach the questionnaire with a view to obtain high-quality data.

### ***Data analysis***

Data were received and validated in Microsoft Excel before being exported to Stata 16 for analysis. We compared descriptive statistics by circumcision status (circumcised vs uncircumcised) using chi-square tests. The association between masculinity norms and HIV risky behaviour was assessed by fitting a linear regression model since the outcome variable



(masculinity norms) was treated as a continuous variable in the form of an index. We reported the coefficients, 95% confidence intervals (CIs) and P-values from both the univariate and multivariate analyses since all results were assumed to be statistically significant at 5%.

### ***Description of dependent (HIV risky behaviour)***

The HIV risk behaviours focused on in this study included level of engagement in transactional sex, non-condom use (Peitzmeier et al., 2020), sex after drinking and condom usage after drinking (Wray et al., 2020). Questions such as "How often during do you engage in transactional sex? Have you ever engaged in sexual intercourse after drinking? How often do you condom after drinking? Do you always use a condom in general? were asked and given response options included, Always, Sometimes, and Never. Participants who responded "always" or sometimes were considered to be engaging HIV risk behaviours.

### ***Description of the independent variable (Masculinity norms)***

The masculinity index was created basing on the beliefs or preferences of men towards sexual intercourse. This is because (hegemonic) masculinity does not only place men in positions of control over women but also holds that male preferences are likely to take precedence in heterosexual encounters (Philaretou & Allen, 2001; Jewkes & Morrell, 2012; Moodley, & Colvin, 2018). For example, Philaretou & Allen (2001) view that "the social construction of masculinity and femininity, as culturally based ideologies necessary for the scripting of gender relations, attitudes, and beliefs" (p. 9). Hence, sexual beliefs such as *men need for sex more than women*, *men decide on condom use*, and *men dislike using condoms* were considered as significant proxy representatives for men's (hegemonic) masculinity. The responses from the were captured on a three-level Likert scale, and they included: [1] Agree, [2] partially agree and [3] disagree. The responses were summarised to create a masculinity index that ranged between 5 and 15

## **FINDINGS**

Table 1 below shows the socio-demographic characteristics of participants by their circumcision status. In total, the average masculinity index was 9.8, with a standard deviation of 1.9. The majority of the participants were aged between 20 to 24 years (23.1%), had incomplete secondary education (49.6%), had no income (60.1%), always lived in the community (62.5%), were not away from home for more than one month in the previous 12 months prior to the study (91.7%), and were separated but still legally married (85.4%).

**Table 1: Socio-demographic characteristics of respondents by circumcision status.**

Characteristics, N (%)	Circumcised (n=1,686)	Uncircumcised (n=2,204)	Total (n=3,895)
<b>Masculinity index (mean, sd: range)</b>	9.9 (1.89: 5–14)	9.8 (1.83: 5–15)	9.8 (1.88: 5–15)
<b>Age group (years)</b>			
15-19	495 (26.4)	378 (17.2)	875 (22.5)
20-24	464(27.5)	436 (19.8)	901 (23.1)
25-29	253 (15.0)	383(17.4)	638 (16.4)



30-34	175 (10.4)	365 (16.6)	540 (13.9)
35-39	124(7.4)	255 (11.6)	379 (9.7)
40-44	96 (5.7)	221 (10.0)	317 (8.1)
45-49	78 (4.6)	166 (7.5)	245 (6.3)
<b>Highest education level</b>			
No schooling/preprimary	13 (0.8)	16 (0.7)	29 (0.74)
Primary (grade 1-7)	71 (4.2)	139 (6.3)	210 (5.4)
Incomplete secondary (grade 8-11)	774 (45.9)	1,155 (52.4)	1,931 (49.6)
Completed secondary (grade 12)	687 (40.8)	784 (12.1)	1,473 (37.8)
Tertiary (diploma/degree)	139 (8.3)	111 (5.0)	250 (6.4)
No response	01 (0.1)	01 (0.1)	02 (0.05)
<b>Total household monthly income</b>			
No income	1,048 (62.2)	1,289 (58.5)	2,339 (60.1)
R1-R500	135 (8.0)	137 (6.2)	273 (7.0)
R501-R2500	232 (13.8)	458 (20.8)	691 (18.0)
R2501-R6000	207 (12.3)	266 (12.1)	475 (12.2)
> R6000	63 (3.7)	54 (2.5)	117 (3.0)
<b>Living in community</b>			
Always	1,071 (63.6)	1,358 (61.6)	2,434 (62.5)
Moved in < 1 year ago	44 (2.6)	71 (3.2)	115 (3.0)
Moved in > 1 year ago	570 (33.8)	774 (35.1)	1,345 (34.5)
No response	00 (0.0)	01 (0.1)	01 (0.03)
<b>Away from home &gt; 1 month in the last 12 months</b>			
Yes	145 (8.6)	175 (7.9)	320 (8.2)
No	1,539 (91.3)	2,028 (92.1)	3,573 (91.7)
No response	01 (0.1)	01 (0.1)	02 (0.05)
<b>Marital status</b>			
Single, not living with partner	96 (5.7)	155 (7.0)	251 (6.5)
Legally married	53 (3.2)	123 (5.6)	176 (4.5)
Single, but in stable relationship	04 (0.2)	07 (0.3)	11 (0.3)
Living together as husband and wife	01 (0.1)	01 (0.1)	02 (0.1)
Widowed	01 (0.1)	04 (0.2)	05 (0.1)
Divorced	46 (2.7)	78 (3.5)	124 (3.2)
Separated, but still legally married	1,484 (88.1)	1,836 (83.3)	3320 (85.4)

The study fitted a linear regression model to assess the association between masculinity norms and risky sexual behaviour and other covariates (socio-demographic characteristics), as shown in Table 2. In the univariate model, masculinity norms were associated with having sex after drinking, condom use during sexual intercourse, and drug use. Age group, education level, and total monthly household income were also statistically and significantly associated with masculinity norms. For example, masculinity norms increased by 0.6 among men who sometimes had sex after drinking compared to those who always had sex after drinking ( $\beta=0.58$ ,  $P=0.018$ ); masculinity norms increased by one among men who did not have sex after



drinking compared to those who always had sex after drinking ( $\beta=0.98$ ,  $P<0.001$ ). Masculinity norms decreased by 0.4 among men who sometimes used condoms during sexual intercourse compared to those who always used condoms ( $\beta=-0.39$ ,  $P=0.003$ ); similarly, masculinity norms decreased by 0.5 among men who never used condoms during sexual intercourse compared to those who always used condoms ( $\beta=-0.52$ ,  $P=0.001$ ). Masculinity norms decreased by 0.3 among men who used drugs compared to non-drug users ( $\beta=-0.34$ ,  $P<0.001$ ). Further still, masculinity norms reduced by 0.8 among men with primary education level compared to those without education at all ( $\beta=-0.75$ ,  $P=0.04$ ), and having a total monthly income of R501-R2500 reduced masculinity norms among men by 0.2 compared to those with no monthly income ( $\beta=-0.21$ ,  $P=0.01$ ).

**Table 2: Univariate analysis of the association between masculinity norms, risky sexual behaviours, and other covariates.**

Variable	Coefficient	95% CI	P-value
Age group; Ref=15-19			
20-24	-0.200	[-0.38, -0.03]	0.025*
25-29	-0.135	[-0.32, 0.06]	0.175
30-34	-0.283	[-0.48, -0.081]	0.060
35-39	-0.345	[-0.572, -0.119]	0.030*
40-44	-0.162	[-0.403, 0.079]	0.189
45-49	-0.355	[-0.620, -0.09]	0.090
Highest education level: Ref=No schooling /preprimary			
Primary (grade 1-7)	-0.752	[-1.48, -0.02]	0.044*
Incomplete secondary (grade 8-11)	-0.635	[-1.325, 0.05]	0.071
Completed secondary (grade 12)	-0.510	[-1.20, 0.181]	0.148
Tertiary (diploma/degree)	-0.482	[-1.205, 0.241]	0.191
No response			
Total household monthly income: Ref=No income			
R1-R500	0.225	[-0.011, 0.460]	0.061
R501-R2500	-0.209	[0.369, -0.05]	0.010*
R2501-R6000	-0.021	[-0.206, 0.164]	0.824
> R6000	-0.171	[-0.519, 0.175]	0.337
Marital status: Ref= Single, not living with partner			
Legally married	0.104	[-0.257, 0.465]	0.573
Single, but in stable relationship	0.181	[-0.953, 1.316]	0.754
Living together as husband and wife	1.454	[-1.161, 4.069]	0.276
Widowed	0.254	[-1.409, 1.918]	0.765
Divorced	0.059	[-0.345, 0.463]	0.775
Separated, but still legally married	0.328	[0.087, 0.569]	0.080
Have sex after drinking, Ref= Always			
Sometimes	0.581	[0.996, 1.062]	0.018*



Never	0.982	[0.49,1.47]	0.000*
Condom use during sexual intercourse, Ref= Always			
Sometimes	-0.389	[-0.641,0.136]	0.003*
Never	-0.519	[-0.832,-0.206]	0.001*
Have sex with a casual/stranger partner after drinking: Ref=Yes			
Yes	-0.127	[-0.346,0.091]	0.255
Drug use, Ref=Does not use drugs			
Used drugs	-0.343	[-0.470,-0.216]	0.000*
Circumcision status, Ref= Not circumcised			
Circumcised	-0.044	[-0.164,0.075]	0.465

In the multivariate model, as shown in Table 3, only having sex after drinking and condom use were independently associated with masculinity norms. That is, masculinity norms increased by 0.5 among men who did not have sex after drinking compared to those who had sex after drinking ( $\beta=0.54$ ,  $P=0.025$ ). Masculinity norms reduced by 0.4 and 0.5 among men who sometimes and never used condoms, respectively compared to those who always used condoms ( $\beta=-0.37$ ,  $P=0.005$ ;  $\beta=-0.48$ ,  $P=0.004$ ).

**Table 3: Multivariate regression analysis of the association between masculinity norms, risky sexual behaviours and other covariates.**

Variable	Coefficient	P-value	Confidence interval
<b>Sex after drinking: Ref=Yes</b>			
No	0.540	0.025*	[0.069, 1.011]
<b>Condom use: Ref= always</b>			
Sometimes	-0.373	0.005*	[-0.629, -0.115]
Never	-0.481	0.004*	[-0.805,-0.158]
<b>Partner drinking: Ref=Yes</b>			
No	-0.116	0.319	[-0.344, 0.112]
<b>Drug use: Ref=Yes</b>			
No	-0.142	0.197	[-0.358, 0.074]
<b>Circumcision status: Ref=Circumcised</b>			
Not circumcised	0.111	0.332	[-0.113, 0.335]
<b>Total household monthly income: Ref=No income</b>			
R1-R500	0.198	0.393	[-0.257, 0.653]
R501-R2500	-0.024	0.860	[-0.292,0.244]
R2501-R6000	0.077	0.633	[-0.240, 0.395]
> R6000	-0.428	0.175	[-1.048,0.191]



<b>Marital status: Ref= Single, not living with partner</b>			
Legally married	0.140	0.643	[-0.452, 0.731]
Single, but in stable relationship	1.028	0.311	[-0.964, 3.019]
Living together as husband and wife	1.726	0.160	[-0.684, 4.137]
Widowed	1.827	0.290	[-1.560, 5.213]
Divorced	0.044	0.896	[-0.612, 0.700]
Separated, but still legally married	0.184	0.460	[-0.305, 0.673]
<b>Highest education level: Ref=No schooling /preprimary</b>			
Primary (grade 1-7)	-0.417	0.544	[-1.768, 0.933]
Incomplete secondary (grade 8-11)	-0.310	0.635	[-1.589, 0.969]
Completed secondary (grade 12)	-0.143	0.827	[-1.425, 1.139]
Tertiary (diploma/degree)	-0.006	0.993	[-1.351, 1.339]
<b>Age group; Ref=15-19</b>			
20-24	-0.3500	0.1470	[-0.823, 0.124]
25-29	-0.3588	0.1400	[-0.835, 0.118]
30-34	-0.2454	0.3190	[-0.729, 0.238]
35-39	-0.3051	0.2460	[-0.820, 0.210]
40-44	-0.3359	0.2420	[-0.899, 0.227]
45-49	-0.3234	0.2940	[-0.927, 0.281]

In the last model (Table 4), the study assessed the modifying effect of safe male circumcision on the relationship between risky sexual behaviour and masculinity norms. As shown in Table 4, condom use and circumcision status were associated with masculinity norms. However, safe male circumcision status only modified the association between sex after drinking and masculinity norms ( $\beta=1.4$ ,  $P=0.01$ ).

**Table 4: Multivariate regression analysis of the association between masculinity norms, risky sexual behaviours and other covariates with safe male circumcision as the modifier.**

	Multivariate analysis with interactions		
	Coefficient	P-value	Confidence interval
<b>Sex after drinking: Ref=Yes</b>			
No	-0.458	0.317	[-1.355, 0.440]
<b>Condom use: Ref= always</b>			
Sometimes	-0.422	0.044*	[-0.833, -0.012]
Never	-0.585	0.036*	[-1.131, -0.039]
<b>Partner drinking: Ref=Yes</b>			
No	-0.039	0.834	[-0.401, 0.325]
<b>Drug use: Ref=Yes</b>			
No	-0.238	0.194	[-0.597, 0.121]



<b>Circumcision status: Ref=Circumcised</b>			
Not circumcised	-1.262	0.030*	[-2.400, -0.122]
<b>Total household monthly income: Ref=No income</b>			
R1-R500	0.214	0.356	[-0.241, 0.669]
R501-R2500	-0.020	0.882	[-0.288, 0.248]
R2501-R6000	0.087	0.593	[-0.232, 0.406]
> R6000	-0.435	0.169	[-1.055, 0.185]
<b>Marital status: Ref= Single, not living with partner</b>			
Legally married	0.143	0.635	[-0.448, 0.735]
Single, but in stable relationship	1.035	0.308	[-0.956, 3.026]
Living together as husband and wife	1.691	0.169	[-0.721, 4.104]
Widowed	2.014	0.246	[-1.387, 5.416]
Divorced	0.058	0.863	[-0.598, 0.713]
Separated, but still legally married	0.206	0.410	[-0.283, 0.694]
<b>Highest education level: Ref=No schooling /preprimary</b>			
Primary (grade 1-7)	-0.444	0.519	[-1.795, 0.906]
Incomplete secondary (grade 8-11)	-0.332	0.611	[-1.609, 0.947]
Completed secondary (grade 12)	-0.166	0.800	[-1.447, 1.116]
Tertiary (diploma/degree)	-0.026	0.969	[-1.371, 1.318]
<b>Age group; Ref=15-19</b>			
20-24	-0.369	0.128	[-0.843, 0.106]
25-29	-0.378	0.120	[-0.855, 0.099]
30-34	-0.257	0.299	[-0.741, 0.228]
35-39	-0.322	0.222	[-0.839, 0.195]
40-44	-0.346	0.228	[-0.909, 0.217]
45-49	-0.316	0.305	[-0.921, 0.288]
<b>Interactions</b>			
Circumcision status and sex after drinking	1.361	0.011*	[0.314, 2.409]

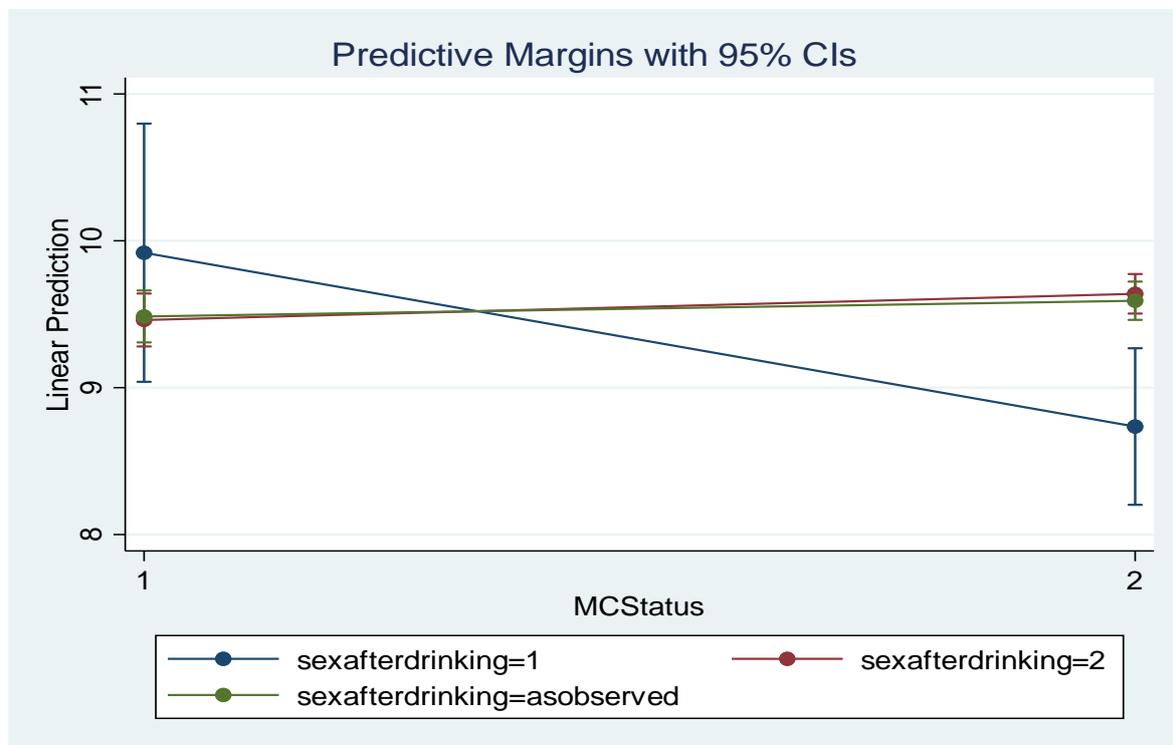
\*Means significant at a 5% confidence level.

From Table 5 and Figure 1 below, men who were circumcised, always and sometimes had sex after drinking presented a higher masculinity index (10 vs 9.5) compared to those who were uncircumcised, but always and sometimes had sex after drinking (8.7 vs 9.6).



**Table 5: Predictive margins**

Variable	Predictive Margins		
	Margin	95% CI	P-value
<b>Circumcision _status</b>			
Yes	9.485	9.31, 9.66	0.000
No	9.592	9.46, 9.77	0.000
<b>Sex after drinking</b>			
Always	9.166	8.69, 9.63	0.000
Sometimes	9.579	9.47, 9.63	0.000
<b>Circumcision status and sex after drinking</b>			
Circumcised men who always had sex after drinking	9.919	9.04, 10.79	0.000
Circumcised men who sometimes had sex after drinking	9.461	9.28, 9.64	0.000
Uncircumcised men who always had sex after drinking	8.735	8.20, 9.27	0.000
Uncircumcised men who sometimes had sex after drinking	9.639	9.50, 9.77	0.000



**Figure 2: A margins plot showing the predicted masculinity index by circumcision status**



## DISCUSSION

This study assessed the relationship between masculinity (hegemonic) norms and HIV risky behaviour in uMgungundlovu District, Kwazulu-Natal, South Africa. The study results demonstrated that masculinity norms were statistically and significantly associated with HIV risky behaviour, particularly sex after drinking and condom use. These results agree with the findings from previous studies carried out in Africa that linked masculinity with HIV risky behaviours. For example, a study conducted by Odimegwu and Okemgbo (2008) in Nigeria indicated that unsafe sexual practices are significantly associated with ascriptions to traditional masculine ideologies. Moreover, increased masculine ideology has been cited to be associated with negative attitudes towards condom use (Noar & Morokoff, 2002). Another study conducted in Eastern Africa, pointed out that “understanding of the understanding of the risky conduct of men cannot be achieved without analysing masculinity and paying attention to the socioeconomic conditions under which it is constructed” (Silberschmidt, 2004, p. 53).

High masculinity norms were also associated with engagement in sexual intercourse after drinking alcohol. This is a critical finding since earlier research has ranked alcohol consumption among the riskiest factors leading to increased HIV incidence rate (Schneider, Chersich, Neuman and Parry, 2012). Alcohol use before sex does not only lead to increased incidences of unprotected sex but also lead to higher chances of sex with multiple and non-primary partners (Scott-Sheldon et al., 2009; Carey et al., 2016). Moreover, alcohol consumption, especially in large quantities is a common behaviour among intending to emphasize their masculinity (Chadwick, 2007).

The final model assessed the modifying effect of safe male circumcision on the relationship between risky sexual behaviour and masculinity norms. As shown in Table 4, circumcision status only modified the relationship between masculinity norms and having sex after drinking. This means that safe male circumcision gives men the confidence to engage in unprotected sex due to the perceived low risk of infection. A study conducted by Kibira et al., (2015) indicated that “[t]he prevalence of all sexual risky behaviours was higher among the circumcised than the uncircumcised men” ...and “a lower prevalence of condom use among the circumcised” (P. 9). The same study observed that perceived low risk of contracting might attenuate the effectiveness of safe male circumcision if men increase sexually risky behaviours.

## CONCLUSIONS

Overall, the study findings revealed that masculinity is associated with HIV risky behaviours. The results indicated that sex after drinking and non-use of condoms were associated with masculinity norms. These sex risky behaviours were likely to exacerbate among circumcised than uncircumcised men. Hence, it believed that although SMC is meant to reduce the risk of HIV transmission, where it is not followed by adequate sensitisation, the reverse effect might be experienced. The study, therefore, affirms the notion presented in the previous literature that contextual, structural, and cultural factors have a profound impact not only on sustaining HIV risk behaviours, but also hindering the efficacy of HIV intervention programmes. Since almost all the conventional HIV prevention measures, especially condom use are highly determined by men, it is amenable that involving and mainstreaming men’s masculinities and behavioural changes into HIV programming would produce enormous dividends towards the efforts to



minimise HIV among rural-based South Africans. Thus, there is a need for HIV prevention programming to shift from models of preventive programmes and interventions that are individual based to a more cultural, contextual, and multi-level explanations and interventions.

### **Recommendations for Further research**

There is a need for further research that focuses on women's perception of how men's masculinity affects their efforts to reduce HIV, for example, HIV testing and enrolment on Antiretroviral Therapy. This is because masculinity norms give men more control over women not only regarding sexual intercourse but also their movements and decisions about life. There is a likelihood that men might impede their partners' efforts to take up services aiming at minimising the HIV spread.

### **Declarations**

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#### ***Conflict of Interest***

The authors declare that there no potential conflicts of interest regarding the research, authorship, and/or publication of this article.

#### ***Availability of data and materials***

The datasets generated and/or analysed during the current study cannot be made public due to restrictions from the funder and the fact that the analysis was just a small section of a big study.

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