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# Gender role conflict and sexual health and relationship practices amongst young men living in urban informal settlements in South Africa

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## ABSTRACT

Qualitative research suggests that men's inability to achieve dominant forms of masculinity may be related to HIV-risk behaviours and intimate partner violence (IPV) perpetration. Using clustered cross-sectional data, we assessed how young men's gender role conflict was associated with HIV-risk behaviours in urban informal settlements in KwaZulu-Natal, South Africa. Gender Role Conflict and Stress (GRC/S) was measured using a South African adaptation of the GRC/S scale comprising three sub-scales: subordination to women; restrictive emotionality; and success, power and competition. In random-effect models adjusting for socio-demographics, we tested the relationship with GRC/S sub-scales and sexual health behaviours (transactional sex, use of sex workers,  $\geq 2$  main partners and  $\geq 2$  casual/once off partners), and relationship practices (relationship satisfaction, relationship control, partnership type and perpetration of IPV). Overall, 449 young men (median age = 25, Q1, Q3 = 23–28) were included in the analysis. Higher GRC/S scores, denoting more GRC/S, were associated with increased relationship control and increased odds of having  $\geq 2$  casual or one-off partners and engaging in transactional sex. We found differences in associations between each sub-scale and sexual health and relationship practices, highlighting important implications for informing both theoretical understandings of masculinity and gender transformative efforts.

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## KEYWORDS

Men; masculinity; South Africa; HIV-risk; gender transformation

## Introduction

Gender inequitable masculinities have been associated with a range of sexual health and relationship practices that drive HIV acquisition. When men are more gender inequitable, they are more like to have multiple sexual partnerships, reduced condom

use, engage in transactional sex, substance use and perpetrate intimate partner violence (IPV) (Jewkes and Morrell 2010; Fleming, DiClemente, and Barrington 2016). Not only are these behaviours strongly associated with incident HIV acquisition, but they have important implications for the health and human rights of women (Jewkes et al. 2010).

Much work around gender inequitable masculinities, IPV and HIV has focused on generalised heterosexual epidemics within HIV hyper-endemic settings, including in South Africa (Jewkes and Morrell 2010; Bhana and Anderson 2013). Historical and ongoing wealth inequities, the legacy of apartheid, widespread violence and constructions of masculinity influence variations in the distribution of HIV and IPV in South Africa (Coovadia et al. 2009; Gibbs et al. 2015). In informal settlements in South Africa, there is a disproportionately high burden of HIV and IPV (Shisana et al. 2014; Hunter 2010; Gibbs et al. 2015). Urban informal settlements as geographical and social spaces have persisted since the 1980s in South Africa and consist of a large proportion of migrants, coming from rural areas seeking employment, and the opportunity to be out of parental control (Gibbs et al. 2010).

Connell's conceptualisation of hegemonic masculinity has informed current understandings and theorisation about men's practices, identities and sexual health and relationship practices (Connell 2005; Connell 1987). Hegemonic masculinity refers to the local, national and global cultural constructions that legitimise men's power over women in society, and is the idealised formation of masculinity through which all men, and women, construct identities, masculinities and femininities (Connell 1987). The hegemonic masculinity within any given context is not necessarily the numerically dominant form of masculinity (Connell 2005; Connell 1987; Fleming, Lee, and Dworkin 2014), but is rather an idealised form of masculinity that few, if any, men can achieve (Jewkes et al. 2015; Morrell et al. 2013). While hegemonic masculinities vary by time and place, in their current configuration, they are associated with a heterosexual, wage earning man, who establishes a family and supports them through work (Connell 2005; Connell 1987).

In the face of extreme poverty, racism and systemic violence, many men, in particular young men, struggle to achieve the hegemonic masculinity, including wage labour and providing for families (Morrell et al. 2013; Jewkes et al. 2015). In response, men construct a range of different forms of masculinities, including subordinated forms of masculinities, which partially resist but also support the hegemonic form of masculinity (Fleming, Lee, and Dworkin 2014; Gibbs et al. 2015).

Qualitative and quantitative research in urban informal settlements of South Africa, has described the dominant form of masculinity as a subordinated, youthful or 'hyper-masculinity', with the hegemonic masculinity being a wage earning masculinity (Gibbs et al. 2015; Gibbs, Sikweyiya, and Jewkes 2014; Jama Shai et al. 2012). This youthful masculinity is often described in relatively homogenised and caricatured ways linked to particular practices, including perpetration of IPV, having multiple partnerships and engaging in transactional sexual relationships as a means to display dominance over women and other men in society (Morrell et al. 2013; Gibbs, Sikweyiya, and Jewkes 2014). There is relatively little reference to young men's ambiguous relationship to this youthful masculinity, their complex emotional thoughts, or conflict between different

forms of masculinity, even though these are key components of theoretical writing on masculinities (Messerschmidt 2012; Seidler 2007). Additionally, there exists much variation in how men 'do' particular forms of masculinity and complexity in their adherence to particular forms of masculinity, even in relatively 'homogenous' groups (Fleming et al. 2016; Morrell et al. 2013; Jama Shai et al. 2012), and that the same men may use different strategies of masculinity at different times, depending on who they are engaging with. A homogenous picture of masculinity among marginalised men is limiting and requires further investigation into what aspects of 'masculinities' influence sexual health and relationship behaviours, and how a diverse range of masculinities are associated with sexual behaviour which influence HIV-risk (Fleming, DiClemente, and Barrington 2016).

Masculinity theorists in the Global North have written about how the perceived inability to achieve societal standards of hegemonic masculinity and gender role socialisation affect men's wellbeing, and have developed concepts such as gender role strain as ways to quantify this (Pleck 1995; Bowleg et al. 2011). The disjuncture between hegemonic masculinity and the reality for men to achieve this may lead to 'gender role strain' and 'conflict' that shapes men's behaviours (Pleck 1995). Since the 1980s, studies, mainly conducted in the USA, have included quantitative measures of gender role conflict (O'Neil 2008). In these studies gender role conflict and stress (GRC/S) has been associated with depression (Magovcevic and Addis 2005; O'Neil 2008), alcohol abuse (Magovcevic and Addis 2005), relationship or marital dissatisfaction (Breiding 2004) and sexual violence towards women (Cohn and Zeichner 2006; Amato 2012) among diverse groups of men. However, relatively fewer studies on GRC/S exist in sub-Saharan Africa. Conversely, current African quantitative research on IPV and HIV tends to explore gender attitudes without assessing how men feel about their ability to attain certain forms of masculinity (Jama Shai et al. 2012; Dunkle et al. 2004).

A notable exception to the dearth of quantitative research on GRC/S and sexual health among men in sub-Saharan Africa, includes formative work by Gottert and colleagues, which drew on Pleck's gender role strain theory, to examine an adapted GRC/S scale amongst young men in rural South Africa (Gottert et al. 2016). Findings highlighted that among young men, those with more GRC/S had increased odds of partner concurrency, IPV perpetration and alcohol abuse (Gottert et al. 2017).

In this paper we assess whether GRC/S was associated with sexual health and relationship practices amongst young men residing in urban informal settlements in KwaZulu-Natal, South Africa. We hypothesise that young men with higher GRC/S scores will be more likely to engage in HIV-risk behaviours, specifically transactional sex, higher number of sexual partners, having sex with a sex worker and have lower relationship satisfaction and will be more likely to perpetrate IPV.

## Methods

The study was undertaken in urban informal settlements in eThekweni municipality, KwaZulu-Natal, the third largest city in South Africa. Data were drawn from the Stepping Stones and Creating Futures trial, a two-arm cluster randomised control trial that has been previously described (Jewkes et al. 2014; Gibbs et al. 2017). In brief, the

trial aims to reduce men's perpetration and women's experience of IPV and strengthen young women's and men's livelihoods.

At baseline, participants were recruited into the study working with the community-based non-profit organisation Project Empower, based in eThekweni Municipality. Men were eligible to be enrolled into the study if they were aged 18–30, not formally employed or in education, and were a resident in the informal settlement at baseline.

In total 34 clusters comprising of 17–22 men per cluster ( $n=667$ ) were recruited between September 2015 and September 2016. Clusters were determined by informal settlement, with small settlements being combined and large settlements being divided using naturally occurring boundaries (Gibbs et al. 2017).

Randomisation occurred at the cluster level. For clusters randomised into the intervention, men received the Stepping Stones and Creating Futures intervention (comprising of 21 sessions, of 3 hours each), focused on transforming gender norms and strengthening livelihoods. (Gibbs et al. 2017). We then traced the same participants up approximately 12 months after they completed the baseline, to complete a second quantitative interview (the midline survey), and again approximately 24 months after the baseline for an endline interview.

### **Data collection**

This analysis draws on cross-sectional data from the 12-month follow-up survey, as this is the first time the study included questions on GRS/C. Survey data used self-completed questionnaires on cell phones lent to participants, available in English, isiXhosa or isiZulu. Participants were tracked at 12 months using information provided at baseline (such as address, cell phone numbers, and next of kin contact details), by a team of local, trained fieldworkers. Surveys were completed between January and November 2017.

At baseline, all participants provided written informed consent to participate in the study. Initial consent covered all subsequent survey rounds, ensuring that participants understood consent to participate could be withdrawn at any point throughout the study. Ethical approval for the study was provided by the South African Medical Research Council's, and the University of KwaZulu-Natal's ethics committees.

### **Measures**

#### ***Gender role stress/Conflict (GRS/C) Scale and Sub-scales***

GRS/C was assessed using a 19-item scale validated in a previous South African study (Gottert et al. 2016). Response categories for the scale were: "do not agree at all" "somewhat agree" or "agree a lot". Two items with a factor correlation  $<0.40$  were removed. The overall 17-item scale ranged from 17 to 51, with higher scores indicating greater gender role strain or conflict (Cronbach Alpha = 0.85).

Due to survey limits within the trial, we used three of the four sub-scales from the South African adaptation of the GRS/C. Sub-scales measured different constructs of GRS/C, the *success, power and competition* sub-scale had six items, with an example item being "I strive to be more successful than others" (range 6–18, Cronbach alpha = 0.71);

the *subordination to women* sub-scale had five items, an example item being: “I do not like to let women take control of the situation” (range 6–18, Cronbach alpha = 0.77); and the *restrictive emotionality* asked five items, for example: “I do not like to show my emotions to other people” (range 5–15, Cronbach alpha = 0.75). In all cases higher scores indicated greater gender role strain/conflict for each sub-scale.

We identified nine variables assessing different aspects of young men’s sexual health and relationship practices, which have been associated with HIV-risk. These focused on two areas, relationship practices and sexual health behaviours.

### **Relationship practices**

*Sexual relationship satisfaction* was assessed by asking participants, who reported having a main partner (n = 403) “how would you describe your sexual relationship with your main partner?” (very satisfying or satisfying vs. unsatisfying or very unsatisfying). This was recoded into 0 if men reported being unsatisfied or very unsatisfied and 1 if men reported being satisfied or very satisfied.

*Relationship control* was measured using an 8-item Sexual Relationship Power Scale which has been adapted for use in South Africa (Jewkes, Nduna, et al. 2006). Men were asked to ‘strongly disagree’, ‘disagree’, ‘agree’, or ‘strongly agree’ to statements about their own controlling behaviours in relationships, including “I tell my partner who she can spend time with”. One item with a factor correlation <0.40 was removed, resulting in the use of a 7-item scale assessing men’s perceived controlling behaviours with their current or most recent main partner. Higher scores indicating more controlling behaviours (Cronbach alpha = 0.83, range 0–21).

Men were asked about the perpetration of physical IPV and sexual IPV, using a modified World Health Organization violence against women scale adapted for use in South Africa (Jewkes, Dunkle, et al. 2006). Physical and sexual IPV were assessed using six, and three, behaviourally specific items respectively related to violence perpetration in the previous 12 months. Men who responded positively to any of the questions regarding *physical IPV*, including “how many times did you push or shove your current or previous girlfriend or wife?” were coded as perpetrating physical IPV in past 12 months. While men responding positively to any of the sexual IPV questions, including “how many times have you forced your current or previous girlfriend or wife to have sex with you when she didn’t want to?” were coded as perpetrating *sexual IPV* in the past 12 months.

### **Sexual health behaviours**

Participants were asked a single item about the *number of main partners* they had sex with in the last 12 months. We dichotomised the response to be none or one vs.  $\geq 2$ .

Participants were asked about the *type of partner* they last had sex with (main partner (0) vs. once-off, casual or ex-partner (1)).

With respect to *number of casual and once-off sex partners*, participants were asked two separate items about other people they had sex with in the past 12 months. Men were asked about the number of casual (*kwapheni*) partners they had had sex with, and separately about the number of people they had sex with just once. These scores were combined into one score and recoded as none or one vs.  $\geq 2$  of either.

In relation to *transactional sex with a casual or once-off partner*, participants were asked to think about any women they have had sex with just once or any casual partners in the last 12 months. Participants were considered engaging in transactional sex if they reported thinking that their sexual partner may have become involved with them because the participant provided cash or money, support or money for children or family, drugs, food, cosmetics, clothes, a cell phone, transport or anything else they could not afford, or somewhere to sleep for the night, bills or school.

Young men reporting being a *client of a sex worker* was determined by asking participants "In the last 12 months have you had sex with a prostitute?".

### **Control variables**

Multivariable models controlled for intervention status and socio-demographic characteristics including: highest level of education (primary school vs. secondary school but not completed vs. completion of high school). Participants were also asked whether they had worked in the last three months.

Food insecurity was assessed using the household food insecurity access scale (HFIAS) (Coates, Swindale, and Bilinsky 2007). Participants were asked three items about whether anyone in their household had experienced food insecurity in the past four weeks (e.g. In the past 4 weeks, how often was there was no food to eat of any kind in your house because of a lack of money?) with responses, rarely, sometimes or often. The scale was recoded as recommended into a three-level categorical variable, none or little, moderate, or high food insecurity.

Gender attitudes were assessed using a modified Gender Equitable Men's Scale (GEMS), which has been previously adapted and used within South Africa (Jewkes, Nduna, et al. 2006; Jewkes et al. 2014). Participants were asked to answer, "strongly agree", "agree", "disagree" and "strongly disagree" to 20 items regarding their views on relations between men and women e.g. "I think a women should obey her husband". We conducted a factor analysis and removed two items with a correlation factor  $<0.40$ . The 18-item study scale ranged from 0 to 54 with higher scores indicating more inequitable gender attitudes (Cronbach alpha = 0.93).

### **Statistical analysis**

To assess whether the GRC/S scale, and the three sub-scales were independently associated with each sexual health behaviour, we built unadjusted and adjusted Gaussian random effects logistic regression to examine associations between seven different sexual health and relationship practices outcomes with binary outcomes and the overall GRS/C and each GRC/S sub-scale reporting odds ratios (OR) and adjusted odds ratios (aOR) with 95% Confidence Intervals (CIs).

Unadjusted and adjusted Gaussian random effects linear regression examined associations between relationship control and the overall GRS/C and the three sub-scales, reporting  $\beta$  coefficients and 95% CIs. Based on recommendations from the American Statistical Association, we present the results with 95% CIs and do not present the p-values associated with results (Wasserstein and Lazar 2016).

Multivariate models were adjusted for age, education level, work in the last 3 months food insecurity, gender attitudes and intervention arm.

## Results

A total of 449 young men median age = 25 (Q1, Q3 = 23–28) participating in the 12-month follow up survey of SS/CF were included in this cross-sectional analysis. Socio-demographic, sexual health and gender role strain/conflict level characteristics are presented in Table 1. Just over half of young men had some secondary school education (56.0%), but only one third (30.8%) had a high school leaving certificate. Fully 62.8% reported moderate hunger and 10.5% reported severe hunger in the past month. Just under half (48.6%) had worked in the last 3 months.

In terms of sexual health outcomes, 84.9% of young men were satisfied in their sexual relationship with their main partner. In the last year, half (50.1%) of men reported perpetrating physical IPV and one third (39.4%) sexual IPV. Four-tenths reported  $\geq 2$  main partners (41.7%), and  $\geq 2$  casual or one-off partners (40.3%) in the last 12 months, with half (45.5%) reporting their last sexual encounter was with a non-main partner. In the last year, two thirds (65.6%) reported engaging in transactional sex and 15.9% reported being a client of a sex worker.

GRS/C scale scores ranged from 17 to 51 with a median score of 35 (Q1, Q3 = 32, 40). Table 2 presents responses to the overall scale items by sub-scale. Scale item

**Table 1.** Sociodemographic, sexual health and scale-level characteristics of young men.

Characteristic	n (%)
Age median (Q1, Q3)	25 (23, 28)
Education (n = 445)	
Primary School	59 (13.3)
Secondary School	249 (56.0)
Matric	137 (30.8)
Food insecurity	
Little/no hunger	120 (26.7)
Moderate hunger	282 (62.8)
Severe hunger	47 (10.5)
Worked in the last three months	
Yes	231 (51.5)
Satisfied in relationship with primary partner (n = 403)	
Yes	342 (84.9)
Perpetrated any physical IPV in the last year	
Yes	225 (50.1)
Perpetuated any sexual IPV in the last year	
Yes	177 (39.4)
Two or more main partners in the last 3 months	
Yes	187 (41.7)
Two or more casual and one off partners in the last year	
Yes	181 (40.3)
Partner at last sex (n = 433)	
Casual/one off or ex	197 (45.5)
Main	236 (54.5)
Transactional sex in the last year (n = 433)	
Yes	284 (65.6)
Client of a sex worker in the last year (n = 433)	
Yes	69 (15.9)
Gender attitudes median (Q1, Q3)	24 (17, 32)
Relationship Control median (Q1, Q3)	9 (6, 11)

**Table 2.** Independent scale items in Gender Role Conflict/Stress (GRC/S) sub-scales.

Scale Item	Do not agree at all n (%)	Somewhat agree n (%)	Agree a lot n (%)
<b>Response</b>			
<b>Success, power competition</b>			
1. I am often concerned about how others evaluate my ability to provide for my family	77 (17.2)	205 (45.7)	167 (37.2)
2. I strive to be more successful than others.	53 (11.8)	190 (42.3)	206 (45.9)
3. I sometimes define my personal value by my ability to make money or find work.	57 (12.7)	201 (44.8)	191 (42.5)
4. Being physically stronger than other men is important to me.	68 (15.1)	181 (40.3)	200 (44.5)
5. I always strive to win in sports competitions.	82 (18.3)	189 (42.1)	178 (39.6)
6. Having a girlfriend or wife is part of my idea of being a successful man	71 (15.8)	178 (39.6)	200 (44.5)
<b>Subordination to women</b>			
1. Making more money than a woman is a measure of my value and personal worth.	91 (20.3)	185 (41.2)	173 (38.5)
2. Being outperformed at work by a woman would make me uncomfortable.	124 (27.6)	205 (45.7)	120 (26.7)
3. I would be concerned if my friends knew I live with a woman and did any housework.	161 (35.9)	185 (41.2)	103 (22.9)
4. I do not like to let a woman take control of the situation.	106 (23.6)	221 (49.2)	122 (27.2)
5. I would be concerned if my friends knew I stayed at home to take care of children while my wife goes to work.	136 (30.3)	192 (42.8)	121 (27.0)
6. Having a female boss would be difficult for me	181 (40.3)	167 (37.2)	101 (22.5)
<b>Restrictive emotion</b>			
1. I have difficulty telling others I care about them.	151 (33.6)	199 (44.3)	99 (22.1)
2. Talking about my feelings during or after sex is difficult for me.	141 (31.4)	203 (45.2)	105 (23.4)
3. I often have trouble finding words to describe how I am feeling.	113 (25.2)	218 (48.6)	118 (26.3)
4. I do not like to show my emotions to other people.	93 (20.7)	198 (44.1)	158 (35.2)
5. Having someone see me cry would be difficult for me.	74 (16.5)	190 (42.3)	185 (41.2)

reporting differed between sub-scales. Within the success, power and competition sub-scale disagreements ranged from 11.8% of men reporting not agreeing and 45.9% agreeing a lot to the statement “I strive to be more successful than others” to 18.3% disagreeing and 39.6% agreeing a lot to the statement “I always strive to win in sports competitions”.

Within the subordination to women sub-scale, responses ranged from one fifth (20.3%) of men disagreeing and 38.5% agreeing a lot to the statement “making more money than a woman is a measure of my value and personal worth”, through to 40.3% not agreeing and 22.5% agreeing a lot to the statement “having a female boss would be difficult for me”.

Within the restrictive emotionality scale, responses ranged from 16.5% of men disagreeing and 41.2% agreeing a lot to the statement “having someone see me cry would be difficult for me” to 33.6% disagreeing and 22.1% agreeing a lot to the statement “I have difficulty telling others I care about them”.

In unadjusted models (Table 3), higher scores on the whole GRS/C scale were associated with reduced relationship satisfaction (OR = 0.95, 95%CI = 0.90–0.99), more

**Table 3. Crude and 95% Confidence Intervals for nine HIV-risk related outcomes among young men (n = 449).**

	Relationship satisfaction ratio (OR) (95%CI)	Relationship Control Unadjusted Coefficients (β) (95%CI)	Physical IPV in the last year	Sexual IPV in the last year	Two or more main partners in the last year	Partner at last sex (casual or one off)	Two or more casual or one off partners in the last year	Transactional sex in the last year	Client of a sex worker in the last year
			OR	OR	OR	OR	OR	OR	OR
Success, power competition to women	1.02 (0.92–1.13)	<b>0.47 (0.33–0.61)</b>	0.97 (0.89–1.05)	0.95 (0.88–1.04)	<b>1.14 (1.05–1.23)</b>	<b>0.92 (0.87–0.98)</b>	<b>1.12 (1.04–1.21)</b>	1.00 (0.92–1.08)	1.00 (0.91–1.11)
Subordination	<b>0.89 (0.81–0.98)</b>	<b>0.43 (0.31–0.55)</b>	1.04 (0.97–1.12)	<b>1.09 (1.01–1.17)</b>	1.04 (0.97–1.11)	<b>1.17 (1.08–1.26)</b>	<b>1.17 (1.09–1.26)</b>	<b>1.20 (1.12–1.30)</b>	<b>1.18 (1.08–1.29)</b>
Restrictive emotions	<b>0.78 (0.69–0.89)</b>	<b>0.51 (0.36–0.65)</b>	1.07 (0.99–1.17)	<b>1.16 (1.06–1.27)</b>	1.05 (0.97–1.14)	<b>1.11 (1.04–1.18)</b>	<b>1.20 (1.11–1.31)</b>	<b>1.18 (1.08–1.28)</b>	<b>1.17 (1.05–1.31)</b>
GRC/S (total scale)	<b>0.95 (0.90–0.99)</b>	<b>0.25 (0.19–0.30)</b>	1.01 (0.98–1.05)	<b>1.04 (1.00–1.07)</b>	<b>1.04 (1.00–1.08)</b>	1.02 (0.99–1.05)	<b>1.09 (1.05–1.12)</b>	<b>1.07 (1.03–1.10)</b>	<b>1.06 (1.02–1.11)</b>

Items in **bold** are statistically significant ( $p < 0.05$ ).

controlling behaviours ( $\beta = 0.25$ , 95%CI = 0.19–0.30), greater perpetration of past year sexual IPV (OR = 1.04, 95%CI = 1.00–1.07), reporting  $\geq 2$  main partners in the past year (OR = 1.04, 95%CI = 1.00–1.08) and reduced likelihood the last person they had sex with was a main partner (OR = 0.97, 95%CI = 0.94–1.00). Additionally, a higher GRS/C scale score was associated with  $\geq 2$  casual or once off sexual partners (OR = 1.09, 1.05–1.12) compared to none or one in the past year, engaging in transactional sex (OR = 1.07, 95%CI = 1.03–1.10) and being a client of a sex worker (OR = 1.06, 95%CI = 1.02–1.11).

Higher success, power and competition scores were associated with increased controlling behaviours, reporting  $\geq 2$  main sexual partners in the past year, and a reduction in  $\geq 2$  casual partners in the past year. Higher subordination to women scores were associated with reduced relationship satisfaction, higher relationship control, more perpetration of sexual IPV and higher odds of last sex being with a casual/one off partner. Higher scores on the subordination to women sub-scale were also associated with  $\geq 2$  casual partners, transactional sex and being a client of sex worker. Higher scores on restrictive emotionality were associated with less relationship satisfaction, higher controlling behaviours, increased sexual IPV perpetration and lower odds of last sex being with a main partner. Higher scores on the restrictive emotionality were associated with two or more casual partners, transactional sex and being a client of a sex worker.

In adjusted models (Table 4), higher GRS/C scale scores were associated with increased relationship control scale scores ( $\beta = 0.09$ , 95%CI = 0.04–0.14), reduced odds of physical IPV perpetration in the last year (aOR = 0.96, 95%CI = 0.92–1.00) and increased odds of both having  $\geq 2$  casual or once off sexual partners in the last year (aOR = 1.05, 95%CI = 1.01–1.09) and engaging in transactional sex in the last year (aOR = 1.05, 95%CI = 1.01–1.09).

Higher scores on the success, power and competition sub-scale were associated with sexual health and relationship practices related to main partners. Specifically, higher gender role strain around success, power and competition was associated with increased relationship control ( $\beta = 0.23$ , 95%CI = 0.12–0.35). Conversely, higher scores were associated with reduced odds of physical (aOR = 0.90, 95%CI = 0.83–0.98) and sexual IPV perpetration (aOR = 0.89, 95%CI = 0.81–0.98) in the last year, as well as less likelihood that the last sex partner was a casual or once-off partner (aOR = 0.89, 95%CI = 0.82–0.96). Additionally, higher success, power and competition scores were associated with reporting  $\geq 2$  main partners in the last year (aOR = 1.09, 95%CI = 1.01–1.18).

Men reporting higher scores (i.e. more gender role strain) on the subordination to women sub-scale were more likely to have sex outside of their primary relationships. Specifically, higher subordination to women scores were associated with being more likely to report  $\geq 2$  casual or once-off sexual partners in the past year (aOR = 1.09, 95%CI = 1.01–1.18), transactional sex (aOR = 1.17, 95%CI = 1.08–1.27) and being a client of a sex worker (aOR = 1.13, 95%CI = 1.02–1.25).

Higher restrictive emotionality scores were associated with less relationship satisfaction with a main partner (aOR = 0.82, 95%CI = 0.71–0.94), increased relationship control scale scores ( $\beta = 0.17$ , 95%CI = 0.04–0.14) and the last person they reported having sex with being a non-main partner (aOR = 1.14, 95%CI = 1.05–1.24). Higher restrictive

**Table 4. Adjusted and 95% ConfidenCE Intervals for nine HIV-risk related outcomes among young men (n = 449).**

	Relationship satisfaction Adjusted odds ratio (aOR) (95%CI)	Relationship Control Adjusted Coefficients (β) (95%CI)	Physical IPV in the last year	Sexual IPV in the last year	Two or more main partners in the last year	Partner at last sex (casual or one off)	Two or more casual or one off partners in the last year	Transactional sex in the last year	Client of a sex worker in the last year
			aOR (0.83–0.98)	aOR (0.81–0.98)	aOR (1.03–1.22)	aOR (0.82–0.96)	aOR (0.99–1.16)	aOR (0.88–1.04)	aOR (0.97–1.08)
Success, power competition	1.08 (0.96–1.20)	<b>0.23 (0.12–0.35)</b>	<b>0.90 (0.83–0.98)</b>	<b>0.89 (0.81–0.98)</b>	<b>1.12 (1.03–1.22)</b>	<b>0.89 (0.82–0.96)</b>	1.07 (0.99–1.16)	0.95 (0.88–1.04)	0.97 (0.97–1.08)
Subordination to women	0.94 (0.84–1.05)	0.11 (-0.00 to 0.21)	0.93 (0.86–1.01)	1.00 (0.92–1.09)	1.01 (0.93–1.09)	1.06 (0.99–1.14)	<b>1.09 (1.01–1.18)</b>	<b>1.17 (1.08–1.27)</b>	<b>1.13 (1.02–1.25)</b>
Restrictive emotions	<b>0.82 (0.71–0.94)</b>	<b>0.17 (0.04–0.14)</b>	0.97 (0.88–1.06)	1.09 (0.99–1.21)	1.01 (0.92–1.11)	<b>1.14 (1.05–1.24)</b>	<b>1.12 (1.02–1.22)</b>	<b>1.13 (1.03–1.24)</b>	<b>1.12 (0.99–1.26)</b>
GRC/S (total scale)	0.97 (0.92–1.02)	<b>0.09 (0.04–0.14)</b>	<b>0.96 (0.92–1.00)</b>	0.99 (0.95–1.03)	1.03 (0.99–1.06)	1.00 (0.97–1.03)	<b>1.05 (1.01–1.09)</b>	<b>1.05 (1.01–1.09)</b>	<b>1.04 (0.99–1.09)</b>

All models adjusted for age, education level, past 3 months employment, food insecurity, gender attitudes, intervention, and clustering by neighborhood. Items in **bold** are statistically significant ( $p < 0.05$ ).

emotionality scores were also associated with reporting  $\geq 2$  casual partners (aOR = 1.12, 95%CI = 1.02–1.22) and transactional sex (aOR = 1.13, 95%CI = 1.03–1.24).

## Discussion

We found that higher GRS/C scale scores among young men were associated with more controlling behaviours, more casual and once-off sexual partners and greater use of transactional sex. Variations in the results by sub-scale however offer a more complex understanding of masculinities for men in marginalised environments such as informal settlements, highlighting the complexity in understanding young men's masculinities, and the disjuncture between hegemonic masculinity and the realities of men living their lives.

Previous work in urban informal settlements in South Africa suggests that in contexts of extreme poverty and limited economic opportunities young men construct a 'youthful masculinity' that prioritises control over women using violence, as well as sex, to achieve forms of respect, which are not attainable through work and establishing families (Gibbs et al. 2015; Gibbs, Sikweyiya, and Jewkes 2014). Our results add quantitative support to the argument that greater GRS/C may be associated with this 'youthful masculinity'. However, our results also highlight the complexity in how masculinities were performed, as indicated by analysis of the sub-scales and their varied associations with relationship and HIV-risk practices, extending previous work on masculinities within informal settlements, which has tended to homogenise young men as subscribing to a relatively homogenous subordinated masculinity (Gibbs et al. 2015; Gibbs, Sikweyiya, and Jewkes 2014).

Sustaining one primary relationship is one aspect of hegemonic masculinity that has been associated with increased status among peers (Siu, Seeley, and Wight 2013). In our study, men with higher success, power and competition scale scores, were more likely to have had sex with a main partner at last sex and have more than two main partners in the past year. Men who prioritise success and power may be trying to align with a hegemonic masculinity (Fleming, Lee, and Dworkin 2014; Connell 2005), which emphasises establishing and maintaining a main partner and home. Higher success, power and competition scores were further associated with increased relationship control and reduced perpetration of physical and sexual IPV. Previous research has highlighted that due to increases in emotional connections within main partnerships, men may be less likely to be violent, compared to casual relationships (Zembe et al. 2015). Thus, these young men may be seeking to establish a form of masculinity that relies on portrayals of success and power (Gibbs et al. 2015).

The success, power and competition sub-scale attempts to measure men's perceptions and desires to be successful and demonstrate power over other men (Gottert et al. 2016). In this study, the majority of young men agreed with items in this sub-scale, indicating that achieving success and power, and being competitive with other men, are dominant aspects of masculinity in this community. This aligns with previous South African research highlighting men's need to be physically strong, virile, and able to provide for their families (Morrell et al. 2013). That these views are normative and endorsed by a wide proportion of participants suggests that success and power may constitute a form of hegemonic masculinity that differs from 'youthful masculinity' in this setting.

Men's power over women in society is a key element to current theoretical understandings of hegemonic masculinity (Coles 2009). Those scoring higher on the subordination to women sub-scale desired more direct power over women, and this could be considered a form of objectification of women. Men with higher subordination to women scores engaged in both transactional and commercial sex work. They were also more likely to report having two or more casual or once-off sexual partners in the past year.

Restrictive emotionality is common element of masculinity globally, where in order to be seen 'as a man', men must hide their emotions (Umberson et al. 2003; Seidler 2007). High levels of repressed emotionality among young men in our study may be a response to the numerous overlapping stressors of racism, violence, poverty and unemployment, which have each been associated with increased perpetration of partner violence (Fleming et al. 2015).

Young men who had higher restricted emotionality scores were less likely to be satisfied within their primary sexual partnerships, which is consistent with research suggesting repressed emotionality can worsen relationship quality (Umberson et al. 2003). Previous work in informal settlements has highlighted that young men are emotionally invested in their main partnerships (Gibbs, Sikweyiya, and Jewkes 2014). Men's emotional restrictiveness was also associated with increased controlling behaviours. Further work to understand how men who do struggle to articulate emotions demonstrate care and support for partners and how this intersects with controlling behaviours, remains important.

### **Limitations**

There are several limitations of this study. First, due to the cross-sectional nature of the investigation no causal inferences can be made regarding the associations found within this study. Second, we did not use all four sub-scales of the GRS/C due to limited space in the questionnaire, and there was no specific adaptation work for use of the scale in this study. Third, this intervention specifically targeted young men living in informal settlements of KwaZulu-Natal with no formal employment at baseline; because of this, the levels of GRS/C, particularly surrounding stress related to employment may be higher than in a general population, and the study cannot be seen as representative of all young men in informal settlements, or in South Africa.

### **Implications**

Study findings have implications for informing both theoretical understandings of masculinities and, thinking through the development of gender transformative interventions among men. First, the association between the sub-components of the GRS/C and young men's sexual health and relationship behaviours, which we suggest may be driven by the disjuncture between hegemonic masculinity and young men's ability to achieve this, suggest there is a need for programmes to work to transform masculinities in order improve young men's sexual health and relationship practices, both for their own health and that of female partners (Fleming et al. 2016; Fleming, Lee, and Dworkin 2014).

Second, results indicating an association between limited emotionality and HIV-risk behaviours and violence, highlight the importance of programming that builds capacity for spaces in which men can work on developing a language around emotionality that resonates with them (Peacock and Levack 2004). Strengthening men's ability to articulate emotions, may reduce controlling and violent behaviours towards intimate partners (Umberson et al. 2003). However, in order to transform structural relationships of power within informal settlements of South Africa, emotionality must be connected to broader work on transforming masculinities and addressing larger structural factors (e.g. class and race) that influence marginalisation and restrictive emotionality (Seidler 2007; Dworkin et al. 2013; Morrell and Jewkes 2011).

Finally, there remains much to be learned about the function of psychometric scales used to measure gender attitudes, GRS, and controlling behaviours scales, within the lives of young men growing up in marginalised environments, including informal settlements of KwaZulu-Natal South Africa (Gottert et al. 2016; Fleming, DiClemente, and Barrington 2016). Future work should further explore how men's perceived GRS/C influences their controlling behaviours, and how control within different partnerships influence sexual behaviours that increase HIV-risk for young men and young women.

## Conclusions

Our results highlight that there exists diversity in masculinities amongst young men living in urban informal settlements, and these in different ways were tied to sexual health behaviours and relationship practices. In order to reduce the high levels of IPV and HIV-incidence both in South Africa and globally, gender-transformative work must work on both individual and structural levels in order to shift and reform the gender role strain experienced by young men in these urban informal settlements.

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