

Gender norms and sexual behaviours among men in western Jamaica

Melanie M. Walcott^A, Ellen Funkhouser^B, Maung Aung^C, Mirjam C. Kempf^D, John Ehiri^E, Kui Zhang^F, Marion Bakhoya^A, Deborah Hickman^A and Pauline E. Jolly^{A,G}

^ADepartment of Epidemiology, University of Alabama at Birmingham, Birmingham, AL 35294, USA.

^BDivision of Preventive Medicine, University of Alabama at Birmingham, Birmingham, AL 35294, USA.

^CWestern Regional Health Authority, Cornwall Regional Hospital, Montego Bay, PO Box 9000, St James, Jamaica.

^DDepartment of Family/Child Health and Caregiving and Department of Health Behavior, University of Alabama at Birmingham, Birmingham, AL 35294, USA.

^EDivision of Health Promotion Sciences, University of Arizona, Tucson, AZ 85724, USA.

^FDepartment of Biostatistics, University of Alabama at Birmingham, Birmingham, AL 35294, USA.

^GCorresponding author. Email: jollyp@uab.edu

Abstract. *Objectives:* Gender norms, especially among men, can reduce the effectiveness of HIV prevention programs. We sought to assess the association between attitudes towards gender norms and risky sexual behaviours, and identify sociodemographic factors that predict gender-inequitable and masculinity norms among men in western Jamaica. *Methods:* A cross-sectional, survey of 549 men aged 19–54 years was conducted. Attitudes towards gender norms were measured using the Gender Equitable Men and Macho scales. Logistic regression and general linear models were used to assess associations between gender norms and multiple sexual partners, and to identify the associated sociodemographic factors. Adjusted odds ratios (AORs) and 95% confidence intervals (CIs) are presented. *Results:* Fifty-four percent of the participants (mean age = 32.4 years) reported multiple sex partners and 22% reported unprotected sex with non-regular partner in the past 12 months. Men with moderate (AOR = 2.2; 95% CI = 1.4–3.3) and high (AOR = 4.2; 95% CI = 2.0–8.5) support for inequitable gender norms, and moderate (AOR = 1.7; 95% CI = 1.1–2.7) and high (AOR = 2.5; 95% CI = 1.5–4.3) support for masculinity norms were more likely to report multiple sex partners. Similarly, men with moderate (AOR = 2.4; 95% CI = 1.3–4.3) and high (AOR = 2.5; 95% CI = 1.2–5.2) support for inequitable gender norms were more likely to report unprotected sex with a nonregular partner. *Conclusion:* A high proportion of Jamaican men engage in risky sexual behaviours. These results highlight the need for behaviour change interventions addressing gender norms targeting Jamaican men.

Additional keywords: attitudes, HIV/AIDS, masculinity, multiple sexual partners, unprotected sex.

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Introduction

The World Health Organisation defines gender norms as ‘social expectations of appropriate roles and behaviours for males and females, as well as the social reproduction of these norms in institutions and cultural practices’.^{1,2} In many instances, these norms not only influence the delivery and uptake of health services, but they also contribute to gender differences in disease burden and health outcomes.³ In some societies, masculinity and inequitable gender norms have been found to be associated with poor health-seeking practices,^{4–7} gender-based violence,⁸ early initiation of sex, sex with sex workers, multiple sex partners and exerting dominance over females.^{5,6,8,9} Research conducted by Shannon *et al.* in two of the most HIV-affected countries globally (Swaziland and Botswana) revealed that higher support

for gender-inequitable norms among men was associated with unprotected sex with nonregular partners, perpetration of rape, increased control over sexual decision-making and multiple concurrent sex partners.⁸ Thus adhering to certain gender expectations can create vulnerabilities to HIV infection, influence sexual and reproductive health behaviours, and undermine HIV prevention and control programs.^{1,5,10–12}

The Caribbean region has the second-highest HIV prevalence worldwide after sub-Saharan Africa.^{13,14} Gender differences in sexual norms have been identified as a significant driver of HIV transmission in the Caribbean and are therefore pivotal to our understanding of the dynamics of the HIV epidemic in the region.^{5,6,15,16} The effect of gender norms on men’s behaviours is exacerbated, as most sexual and reproductive health service

programs focus on women and children, with little or no involvement of men.^{17–19} Additionally, in some societies, females are not expected to be knowledgeable about safer sex practices, and those seeking information about safer sex are often viewed as promiscuous or adulterous.^{12,20,21}

The HIV prevalence among adults (15–49 years) in Jamaica (the third-largest island in the Caribbean) is ~1.7%, with higher rates among sex workers (9%) and men who have sex with men (25–30%).^{22,23} Though Jamaica's National HIV/AIDS Response Program has played a central role in slowing the rate of the epidemic, little progress has been made in changing sexual risk behaviours such as having multiple sexual partners, especially among men.²⁴ In Jamaica, males are often socialised to initiate sex at an early age and often have multiple sex partners to demonstrate manhood and prove that they are not homosexuals.²⁵ Having multiple sex partners has been established as a significant risk factor for HIV acquisition.^{26,27} This risk factor is fundamental to the HIV epidemic in Jamaica, as studies consistently reveal that the prevalence of multiple sexual partners among men is >50%^{24,25,28,29} and that 80% of AIDS cases report a history of multiple sexual partners.²⁴ This behaviour also increases women's vulnerability to HIV infection due to their high dependence on men for economic support and men's sexual dominance over them.²⁵ The estimated rate of HIV infection among girls aged 10–19 years is ~2.5 times that of boys within the same age range.³⁰ Much of this is due to the inability of young girls to negotiate safer sex with their partners, who are often older.²⁵ Further, research conducted by Norman using a national sample of 1800 males (50.8%) and females in Jamaica has revealed a low history of HIV testing (37.6%), with men being less likely to report HIV testing.³¹ This suggests that a high proportion of Jamaican men are not aware of their HIV status. Limited involvement of men and inadequate emphasis on gender norms in HIV initiatives could be serving as barriers to Jamaica's HIV prevention and control program.

The objectives of this study were: (1) to examine the association between attitudes towards gender norms (using the Gender Equitable Men (GEM) and Macho scales independently) and sexual behaviours among men aged 19–54 years in western Jamaica, (2) to identify sociodemographic factors that predict scores on the GEM and Macho scales, and (3) to compare the performance of the Macho scale to the GEM scale with respect to the association with sexual behaviours and sociodemographic factors.

Materials and methods

Study design and settings

A cross-sectional study was conducted in western Jamaica during June to August of 2011 among 549 males within the age range of 19–54 years. The participants were recruited from four government-operated hospitals within the Western Regional Health Authority (WRHA). Details about the study setting have been described elsewhere.³² Briefly, the WRHA consists of four parishes (St. James, Trelawny, Hanover and Westmoreland) with an estimated population of ~474 944. Of the 14 parishes in Jamaica, the HIV prevalence of the parishes in the WRHA are among the highest.

To estimate the potential effect of selection bias in the recruitment from hospitals, a community sample of 51 men was compared with the hospital sample with respect to attitudes towards gender norms (GEM and Macho scores), the outcome variables (multiple sexual partners and unprotected sex with nonregular partners) and key sociodemographic variables (age, income and education). Except for age and multiple sexual partners, there were no statistical differences between the hospital and community samples. Men in the community sample tended to be older and were less likely to report having multiple sexual partners.

Ethical approval for the study was obtained from the Institutional Review Board of the University of Alabama at Birmingham, the Advisory Panel of Ethics and Medico-Legal Affairs in the Jamaican Ministry of Health and the Western Regional Health Authority.

Participants

To be eligible for participation in this study, men had to be 19–54 years old, live in the western region and present at one of the four government-operated hospitals for outpatient care or as a visitor. Interviews were conducted in private rooms at the hospital by trained research assistants. Each study participant was given a phone card valued at \$215 Jamaican dollars (equivalent to US\$2.50) after completing the interview.

Data collection

A 143-item questionnaire was developed based on an extensive literature search and was used to collect data on sexual behaviours, reproductive health practices, male circumcision, health-seeking behaviours, attitudes towards gender norms and sociodemographic factors. Two validated scales (GEM and Macho) were included in the questionnaire. The GEM scale has been found to be a culturally sensitive tool for measuring gender norms and has been used in several countries such as India, Kenya, Ethiopia and Nicaragua.³³ It measures equitable and inequitable gender norms, and was developed among young men (15–24 years of age) in Brazil.² The scale is designed to predict behaviours such as condom use, contraceptive use, multiple sexual partners and intimate partner violence. The Macho scale was recently developed among fathers (18–59 years of age) residing in Jamaica and is designed to measure sexual dominance and virility, and the primordial need to father children.³⁴

Although there is some overlap between the constructs of the two scales, the GEM scale is mainly designed to evaluate men's perceptions of relationships with women and the ways in which women should be treated in relationships (degree of equality and inequality), whereas the Macho scale primarily measures men's beliefs about what it means to be a man (how men define themselves as men).^{2,34,35} The GEM scale² was used to measure gender-inequitable and -equitable norms. The scale consists of 24 items scored on a three-point Likert scale (1 = agree; 2 = partially agree; 3 = disagree). Items 1–17 measure gender-inequitable norms, and items 18–24 measure gender-equitable norms. Items on the inequitable-gender norms subscale include: (1) 'Women who carry condoms on them are "easy";' (2) 'Men are always ready to have sex,' and (3) 'It

is the man who decides what type of sex to have.' Items on the equitable gender norms subscale include: (1) 'A man and a woman should decide together what type of contraceptive to use,' and (2) 'A couple should decide together if they want to have children.' Scores for the inequitable gender norms (maximum score = 51) and equitable gender norms (maximum score = 21) subscales were calculated separately. Cronbach's α for the inequitable and equitable subscales are 0.85 and 0.77, respectively.² Scores were classified as 'high,' 'moderate' and 'low' by dividing the sum of the range of answers on the two subscales into three equal and separate parts as recommended by the author who developed the scale. For example, support for inequitable gender norms was classified as: high = 41–51, moderate = 29–40, low = 17–28.²

The Macho Scale³⁴ consists of 13 items (Cronbach's α of 0.82) measuring two dimensions of masculinity (sexual dominance and virility, and the primordial need to beget children) related to male–female gender relations. Items are scored using a Likert scale ranging from one to five, resulting in a minimum score of 13 and a maximum of 65. Higher scores are indicative of higher levels of masculinity. Scores were classified as 'high,' 'moderate' and 'low' by dividing the cumulative frequency distribution of the sample into tertiles, as recommended by the author who developed the scale.³⁴ One of the items, 'A man does not have to tell his partner everywhere he is going,' which was included in the version of the scale that was used in this study, has since been replaced by another item, 'A man should never tell a woman he loves her,' in the final scale that has been published by the author.³⁴

In our sample, internal reliability as measured by Cronbach's α for the inequitable GEM, equitable GEM and Macho scales was 0.74, 0.32 and 0.74, respectively. Due to low reliability in the equitable GEM subscale, we did not use it in any of the analyses presented.

Our dependent variables were multiple sexual partners (primary outcome) and unprotected sex with a nonregular partner (secondary outcome). The number of multiple sexual partners was assessed by asking: 'How many sexual partners have you had in the past 12 months?' If participants had more than one sexual partner, they were classified as having multiple sexual partners. Participants reporting more than one sexual partner in the past 12 months were asked a follow-up question: 'If you have had more than one sexual partner in the past 12 months, what was the main reason?' Unprotected sex with a nonregular partner was assessed by asking: 'In the past 12 months have you had sex with a nonregular partner (someone who was not your wife, main girlfriend or main partner) without using a condom?' Other sexual behaviours that were measured in this study include condom use, sex with a sex worker and HIV risk perception. Regarding condom use, two questions were asked to assess this variable: (i) 'Did you use a condom at last sex?' and (ii) 'How often do you use condoms?' The response options for this question were recoded as consistent condom use (using condoms 100% of the time) and inconsistent condom use (not using condoms, using condoms sometimes or using condoms most of the times). For sex with a sex worker, the question was 'Have you ever had sex with a sex worker?' For HIV risk perception, the participants were asked 'On a scale of 1–3, with 1 = low,

2 = moderate and 3 = high, how would you rate your risk or chance for contracting HIV?' Drug use was measured by asking: 'Do you use any of the following substances? (1) Cocaine, (2) alcohol, (3) marijuana, (4) other or (5) I do not use drugs,' and 'If yes, how often do you use them (per week)?' Less than 1% of the participants reported cocaine use. Hence the use of this substance was not included in the analyses.

Covariates

Sociodemographic factors (age, education, income and marital status) and drug use have been identified as potential confounders of the relationship between gender norms and multiple sex partners.⁸ Thus these variables were also assessed in our study.

Data analysis

Differences between sexual behaviours and sociodemographic factors by age group and attitudes towards gender norms were assessed using χ^2 -test. The Bonferroni correction was used to control for the Familywise Type I error rate due to multiple testing. Specifically, a *P*-value of ≤ 0.0031 ($0.05 \div 16$) was considered statistically significant in the χ^2 analyses (Table 1). A general linear model was used to identify sociodemographic factors that were associated with attitudes towards gender norms (Macho and inequitable GEM scores). Bivariate and multivariable logistic regression analyses were performed to obtain crude and adjusted estimates (odds ratios) of the association between attitudes towards gender norms and having (1) multiple sexual partners and (2) unprotected sex with nonregular partners. The manual backward selection method was performed to identify pertinent variables in the final adjusted logistic regression models. All variables in the bivariate analyses with a *P*-value of < 0.10 were entered and were retained if the *P*-value was < 0.05 . Education was retained in the final models regardless of the *P*-value because of its well-documented association with gender norms and multiple sex partners. Separate models were constructed for inequitable and masculinity gender norms. Data analysis was performed using SAS software ver. 9.2 (SAS Institute, Cary, NC, USA).

Results

The overall participation rate among eligible men was 70%, with 549 men agreeing to participate. The main reasons for not participating were lack of time and fear of missing a scheduled appointment when waiting for care at the hospitals. In our sample, ~34.6% of the participants were recruited from hospitals in St James, 32.6% from Westmoreland, 17% in Trelawny and 15.7% from Hanover, which is representative of the population of the parishes in the WRHA.

The average age of the participants was 32.4 years (s.d. ± 10.1). The majority of men (65.5%) reported the completion of secondary education, having religious affiliations (78.6%) and low monthly income ($< \$30\,000.00$ Jamaican dollars) (63.4%). Overall, 54.3% of the men reported multiple sex partners and 22.3% reported unprotected sex with a nonregular partner within the past 12 months. A higher proportion of younger men, men who were single, men who reported condom use at last sex and men

Table 1. Sociodemographic characteristics and risk behaviours stratified by attitude towards gender norms among men in western Jamaica
 $P \leq 0.0031$ was considered significant. STI, sexually transmissible infection; JAD, Jamaican dollars

Selected variables	Inequitable gender norm score				Macho score			
	Low	Moderate	High	<i>P</i> -value	Low	Moderate	High	<i>P</i> -value
Condom use at last sex				0.029				0.031
Yes	76 (54.7)	177 (53.3)	50 (70.4)		84 (53.2)	114 (51.6)	105 (64.4)	
No	63 (45.3)	155 (46.7)	21 (29.6)		74 (46.8)	107 (48.4)	58 (35.6)	
General condom use				0.024				0.025
Consistent	32 (23.2)	103 (31.2)	30 (41.1)		37 (23.3)	68 (30.8)	60 (37.3)	
Inconsistent	106 (76.8)	227 (68.8)	43 (58.9)		122 (76.7)	153 (69.2)	101 (62.7)	
Unprotected sex with nonregular partners				0.008				0.34
Yes	18 (12.9)	84 (25.5)	19 (26.0)		30 (19.0)	49 (22.1)	42 (25.8)	
No	122 (87.1)	246 (74.6)	54 (74.0)		128 (81.0)	173 (77.9)	121 (74.2)	
Multiple sex partners in past year				<0.001				<0.001
Yes	57 (40.4)	190 (56.7)	51 (69.9)		67 (41.6)	120 (53.8)	111 (67.3)	
No	84 (59.6)	145 (43.3)	22 (30.1)		94 (58.4)	103 (46.2)	54 (32.7)	
Sex with sex worker				0.003				0.002
Yes	40 (29.2)	115 (34.4)	41 (56.2)		40 (25.6)	83 (37.2)	73 (44.2)	
No	97 (70.8)	219 (65.6)	32 (43.8)		116 (74.4)	140 (62.8)	92 (55.8)	
Ever had an STI				0.14				0.66
Yes	48 (34.0)	111 (33.2)	33 (45.2)		21 (13.0)	26 (11.7)	16 (9.8)	
No	93 (66.0)	223 (66.8)	40 (54.8)		140 (87.0)	196 (88.3)	147 (90.2)	
Perceived HIV risk				0.005				0.008
Low	119 (86.9)	237 (71.6)	44 (62.9)		128 (81.0)	167 (76.6)	105 (64.8)	
Moderate	12 (8.8)	45 (13.6)	10 (14.3)		18 (11.4)	24 (11.0)	25 (15.4)	
High	6 (4.4)	49 (14.8)	16 (22.9)		12 (7.6)	27 (12.4)	32 (19.8)	
HIV test in past year				0.98				0.96
Yes	50 (35.7)	122 (36.5)	26 (36.1)		58 (36.0)	79 (35.8)	61 (37.2)	
No	90 (64.3)	212 (63.5)	46 (63.9)		103 (64.0)	142 (64.3)	103 (62.8)	
Alcohol use				<0.001				0.001
Yes	42 (29.8)	103 (30.8)	42 (57.5)		40 (25.0)	74 (33.2)	73 (44.2)	
No	99 (70.2)	231 (69.2)	31 (42.5)		120 (75.0)	149 (66.8)	92 (55.8)	
Marijuana use				<0.001				<0.001
Yes	20 (14.2)	96 (28.8)	32 (43.8)		18 (11.3)	62 (27.8)	68 (41.5)	
No	121 (85.8)	237 (71.2)	41 (56.2)		142 (88.8)	161 (72.2)	96 (58.5)	
Age (years)				0.044				0.006
19–24	53 (37.6)	148 (44.2)	37 (50.7)		57 (35.4)	114 (51.1)	67 (40.6)	
25–34	34 (24.1)	101 (30.2)	19 (26.0)		45 (28.0)	53 (23.8)	56 (33.9)	
35–54	54 (38.3)	86 (25.7)	17 (23.3)		59 (36.7)	56 (25.1)	42 (25.5)	
Education				<0.001				0.003
Primary or less	16 (11.4)	74 (22.1)	28 (38.4)		19 (11.8)	49 (22.0)	50 (30.3)	
Secondary	125 (88.7)	261 (77.9)	45 (61.6)		142 (88.2)	174 (78.0)	115 (69.7)	
Religion				0.002				0.005
None	25 (17.7)	65 (19.5)	27 (37.0)		25 (15.6)	43 (19.4)	49 (29.7)	
Any	116 (82.3)	268 (80.5)	46 (63.0)		135 (84.4)	179 (80.6)	116 (70.3)	
Income (JAD)				0.002				0.010
\$30 000.00	72 (51.1)	224 (66.9)	52 (71.2)		98 (60.1)	130 (58.3)	120 (72.7)	
>\$30 000.00	69 (48.9)	111 (33.1)	21 (28.8)		63 (39.1)	93 (41.7)	45 (27.3)	
Marital status				0.016				0.043
Single	77 (55.4)	220 (66.7)	53 (73.6)		92 (58.2)	142 (64.3)	116 (71.6)	
Living together or married	62 (44.6)	110 (33.3)	19 (26.4)		66 (41.8)	79 (35.8)	46 (28.4)	
Childhood guardian				0.65				0.27
Both parents	56 (39.7)	133 (39.7)	24 (33.3)		58 (36.0)	98 (44.0)	57 (34.8)	
Single parent	58 (41.1)	132 (39.4)	28 (38.9)		71 (44.1)	79 (35.4)	68 (41.5)	
Other ^A	27 (19.2)	70 (20.9)	20 (27.8)		32 (19.9)	46 (20.6)	39 (23.8)	

^AIncludes children's homes (orphanages) and other relatives.

who reported unprotected sex with a nonregular partner within the past 12 months tended to report having multiple sexual partners within the past 12 months. Additionally, a higher

proportion of men who reported current alcohol use and higher support for inequitable gender norms tended to report having multiple sex partners (Table 2).

Table 2. Sociodemographic characteristics, attitudes towards gender norms and sexual risk behaviour among men attending or visiting hospitals in western Jamaica stratified by report of multiple sexual partners within the last 12 months

JAD, Jamaican dollars; STI sexually transmissible infection

Selected variable	All <i>n</i> = 549 <i>N</i> (%)	Multiple sexual partners		<i>P</i> -value
		No (<i>n</i> = 251) <i>N</i> (%)	Yes (<i>n</i> = 298) <i>N</i> (%)	
Age (years)				
19–24	154 (28.1)	43 (17.1)	111 (37.3)	<0.001
25–34	157 (28.6)	70 (27.9)	87 (29.2)	
35–54	238 (43.4)	138 (55.0)	100 (33.6)	
Education				
Primary or less	118 (21.5)	57 (22.7)	61 (20.5)	0.75
Secondary	359 (65.5)	160 (63.8)	199 (66.8)	
Tertiary	72 (13.1)	34 (13.6)	38 (12.8)	
Occupation				
Unskilled or labourer	172 (33.7)	84 (36.2)	88 (31.5)	0.53
Skilled worker	283 (55.4)	123 (53.0)	160 (57.4)	
Professional or managerial	56 (11.0)	25 (10.8)	31 (11.1)	
Employed	353 (64.3)	160 (63.8)	193 (64.8)	0.80
Monthly income (JAD) ≤\$30 000 ^A	348 (63.4)	169 (67.3)	179 (60.1)	0.08
Single marital status	350 (64.7)	134 (54.0)	216 (73.7)	<0.001
Any religious affiliation	430 (78.6)	203 (81.5)	227 (76.2)	0.13
Childhood guardian				
Both parents	213 (38.9)	109 (43.4)	104 (35.0)	0.13
Single	218 (39.8)	92 (36.7)	126 (42.4)	
Other ^B	117 (21.4)	50 (19.9)	67 (22.6)	
Consistent condom use	165 (30.5)	60 (24.5)	105 (35.5)	0.006
Unprotected sex with nonregular partner	121 (22.3)	22 (8.9)	99 (33.6)	<0.001
Condom use at last sex	303 (55.9)	104 (42.3)	199 (67.2)	<0.001
Ever had sex with a sex worker	196 (36.0)	60 (24.2)	136 (46.0)	<0.001
Ever had an STI	192 (35.0)	81 (32.4)	111 (37.3)	0.24
Perceived HIV risk				
Low	400 (74.4)	196 (80.0)	204 (69.6)	0.020
Moderate	67 (12.5)	23 (9.4)	44 (15.0)	
High	71 (13.2)	26 (10.6)	45 (15.4)	
HIV test in past year	198 (36.3)	81 (32.5)	117 (39.4)	0.10
Ever sexually abused	27 (5.0)	11 (4.5)	16 (5.4)	0.62
Current alcohol use	187 (34.1)	61 (24.4)	126 (42.3)	<0.001
Current marijuana use	148 (27.1)	53 (21.2)	95 (32.0)	0.005
Inequitable gender norm score				
Low (17–28)	141 (25.7)	84 (33.5)	57 (19.1)	<0.001
Moderate (29–40)	335 (61.0)	145 (57.8)	190 (63.8)	
High (41–51)	73 (13.3)	22 (8.8)	51 (17.1)	
Macho score				
Low (13–32)	161 (29.3)	94 (37.5)	67 (22.5)	<0.001
Moderate (34–40)	223 (40.6)	103 (41.0)	120 (40.3)	
High (44–65)	165 (30.1)	54 (21.5)	111 (37.3)	

^AUSD \$1 = JAD \$85.^BIncludes children's homes (orphanages) and other relatives.

Men reporting multiple sexual partners stated a wide range of reasons for having more than one partner. The two main reasons given were 'change in relationships' (serial relationships; 22.5%), and 'It is the norm to have more than one sexual partner' (15.6%). Among the participants who did not use condoms at last sex, the most common reasons for not using condoms were 'trust partner' (44.0%), 'no condom was available' (14.7%) and 'personal objection to condom use'

(13.4%). Only 30.5% of the men reported consistent condom use. Almost all (98.5%) men identified as heterosexual.

A higher proportion of men with moderate or high support for inequitable gender norms were more likely to report having multiple sexual partners, unprotected sex with nonregular partners, sex with a sex worker, and alcohol or marijuana use (Table 1). Similarly, a higher proportion of men with high Macho scores tended to report sex with a sex worker,

multiple sex partners, and alcohol and marijuana use; however, no relationship was found with unprotected sex with nonregular partners (Table 1). A higher proportion of men with lower Macho and GEM scores reported inconsistent condom use. Overall, men's sexual behaviours and sociodemographic factors varied significantly and in the same direction on both the inequitable GEM and Macho scales.

In the multivariable linear regression model, age, education and marital status were significantly associated with Macho scores. The association with age was U-shaped: men aged 25–34 years had lower scores than did men in the younger and older age groups. Higher education was inversely associated and single marital status was directly associated with Macho scores. Associations with inequitable gender norms scores were similar to those with the Macho scores, except for income, which had a significant inverse association with inequitable gender norms scores but not with Macho scores (Table 3).

The multivariable logistic regression analyses (Table 4) were divided into three parts: Model 1, Model 2 and Model 3. In Model 1, which includes all the variables with a *P*-value of ≤ 0.10 in the bivariate analyses except Macho scores, men with moderate (adjusted odds ratio (AOR)=2.2; 95% confidence interval (CI)=1.4–3.3) and high (AOR=4.2; 95% CI=2.0–8.5) support for inequitable gender norms were more likely to report multiple sex partners compared with men with low support (Model 1, Table 4). In Model 2, which includes all the variables with a *P*-value of ≤ 0.10 in the bivariate analyses except inequitable gender norm scores, there was an increased odds of reporting multiple sex partners among men with moderate (AOR=1.7; 95% CI=1.1–2.7) and high (AOR=2.5; 95% CI=1.5–4.3) support for masculinity (Model 2, Table 4). Except for marital single status (which was associated with increased odds for having multiple sex partners only in Model 1), all the variables that were retained in both models had comparable strength of association with and in the same direction as having multiple sexual partners (Table 4). In a third model that included all variables with a *P*-value of ≤ 0.10 in the bivariate analyses, the association between multiple sexual partners and moderate (AOR=1.7; 95% CI=1.1–2.8) and high (AOR=2.8; 95% CI=1.3–5.9) support for inequitable gender norms remained significant and in the same direction (although attenuated). However, the association between Macho scores and multiple sexual partners was only significant at the highest category of the scale (AOR=2.0; 95% CI=1.1–3.4; Table 4).

The only variable that was associated ($P \leq 0.10$) with unprotected sex with a nonregular partner in the bivariate analyses was inequitable gender norms (moderate (OR=2.3; 95% CI=1.3–4.0; $P=0.003$) and high (AOR=2.4; 95% CI=1.2–4.9; $P=0.018$). In the final model, which adjusted for age, education, marital status and income, the association between unprotected sex with a nonregular partner and moderate (AOR=2.4; 95% CI=1.3–4.3; $P=0.003$) and high (AOR=2.5; 95% CI=1.2–5.2; $P=0.020$) inequitable gender norms remained significant (data not shown).

Discussion

Gender expectations that result in masculinity, inequitable gender norms, masculine ideologies such as risk-taking,

Table 3. Linear regression of socio-demographic variables associated with attitudes towards gender norms among men in western Jamaica
GEM, gender equitable men; JAD, Jamaican dollars

Characteristics	Macho score		Inequitable GEM score		<i>P</i> -value
	Bivariate parameter estimate (CI)	<i>P</i> -value	Bivariate parameter estimate (CI)	<i>P</i> -value	
Age (years)					
19–24	–0.01 (–1.4 to 1.4)	0.99	–0.7 (–1.9 to 0.5)	0.24	0.22
25–34	–1.4 (–2.8 to –0.01)	0.05	–2.2 (–3.4 to –1.0)	0.006	<0.001
35–54	Referent		Referent		
Secondary education or below	–3.1 (–4.5 to –1.7)	<0.001	–3.9 (–5.1 to –2.7)	0.001	0.002
Skilled or professional	–0.7 (–2 to 0.6)	0.26	1.3 (–2.4 to –0.2)	0.019	0.92
Income >JAD\$30 000	–1.1 (–2.3 to 0.1)	0.08	–1.8 (–2.9 to –0.7)	0.009	0.025
Single marital status:	2.7 (1.4 to 4.1)	0.001	1.5 (0.3 to 2.7)	0.016	0.003
Any religion	–2.2 (–3.6 to –0.8)	0.002	–1.9 (–3.2 to –0.7)	0.002	0.11
Living in community ≥10 years	0.5 (–0.9 to 1.9)	0.52	0.6 (–0.7 to 1.9)	0.39	0.72
Childhood guardian					
Both parents	Referent		Referent		
Single parent	–0.1 (–1.3 to 1.3)	0.93	–0.1 (–1.1 to 1.3)	0.87	0.82
Grandparents	–0.1 (–2.0 to 1.9)	0.96	–0.9 (–0.8 to 2.6)	0.30	0.08
Other ^A	1.3 (–1.3 to 3.9)	0.21	0.9 (–0.9 to 2.8)	0.32	0.36

^AIncludes children's homes (orphanages) and other family relatives.

Table 4. Univariate and multivariable predictors for having multiple sexual partners among men in western Jamaica

OR, odds ratio; CI, confidence interval; JAD, Jamaican dollars; STI, sexually transmissible infection

Characteristics	Bivariate OR (95% CI)	<i>P</i> -value	Multivariable Model 1 ^A OR (95% CI)	<i>P</i> -value	Multivariable Model 2 ^B OR (95% CI)	<i>P</i> -value	Multivariate Model 3 ^C OR (95% CI)	<i>P</i> -value
Age (years)								
19–24	3.6 (2.3–5.5)	<0.001	4.8 (2.9–8.0)	<0.001	4.0 (2.3–6.8)	<0.001	4.3 (2.5–7.4)	<0.001
25–34	1.7 (1.1–2.6)	0.009	2.0 (1.3–3.1)	0.002	1.8 (1.1–2.9)	0.013	2.0 (1.3–3.2)	0.003
35–54	Referent		Referent		Referent		Referent	
Secondary education or below	1.1 (0.8–1.7)	0.53	0.84 (0.52–1.35)	0.47	0.80 (0.49–1.30)	0.40	0.94 (0.57–1.54)	0.80
Income >JAD\$30 000	1.4 (1.0–2.0)	0.08	2.1 (1.4–3.2)	0.003	2.1 (1.4–3.2)	0.005	2.2 (1.5–3.3)	0.002
Single marital status	2.4 (1.7–3.4)	<0.001	–	–	1.6 (1.0–3.6)	0.040	–	–
Any religion	0.7 (0.5–1.1)	0.13	–	–	–	–	–	–
Childhood guardian								
Both parents	Referent		–	–	–	–	–	–
Single parent	1.4 (1.0–2.1)	0.06						
Other ^D	1.4 (0.9–2.2)	0.14						
Sexually abused	1.2 (0.6–2.7)	0.61	–	–	–	–	–	–
Current alcohol use	2.3 (1.6–3.3)	<0.001	2.2 (1.5–3.3)	0.001	2.1 (1.4–3.2)	0.003	2.1 (1.4–3.2)	0.004
Current marijuana use	1.7 (1.2–2.6)	0.005	–	–	–	–	–	–
Perception of HIV risk								
Low	Referent		Referent		Referent		–	–
Moderate	1.8 (1.1–3.2)	0.027	1.8 (1.0–3.3)	0.047	1.8 (1.0–2.4)	0.046		
High	1.7 (1.0–2.8)	0.06	1.5 (0.9–2.7)	0.16	1.5 (0.8–2.7)	0.16		
History of STIs	1.2 (0.9–1.8)	0.24	–	–	–	–	–	–
Inequitable gender norms								
Low	Referent		Referent				Referent	
Moderate	1.9 (1.3–2.9)	0.001	2.2 (1.4–3.3)	0.009			1.7 (1.1–2.8)	0.025
High	3.4 (1.8–6.3)	<0.001	4.2 (2.0–8.5)	<0.001			2.8 (1.3–5.9)	0.007
Macho score								
Low	Referent		Referent		Referent		Referent	
Moderate	2.9 (1.8–4.5)	<0.001			1.7 (1.1–2.7)	0.023	1.5 (0.9–2.4)	0.109
High	1.6 (1.1–2.5)	0.019			2.5 (1.5–4.3)	0.004	2.0 (1.1–3.4)	0.017

^AIncludes all variables except the Macho scale.^BIncludes all variables except inequitable gender norms.^CIncludes all variables.^DIncludes children's home (orphanages) and other family members.

control over women, sexual prowess and violence³⁵ can shape the pathway for increased vulnerability to HIV acquisition for males and females. However, many countries, including Jamaica, do not include masculinity and inequitable gender norms in their national HIV/AIDS programs. In this study involving 549 men who reside in the western region of Jamaica, we found that moderate and high support for masculinity and inequitable gender norms were independently associated with increased odds for having multiple sex partners after controlling for covariates such as age, education, income and other known risk factors (alcohol and marijuana use, and HIV risk perception). Additionally, support for inequitable gender norms was the only factor that was associated with having unprotected sex with a nonregular partner. Overall, these findings suggest that a high proportion of Jamaican men are engaging in high-risk sexual behaviours, which may be driven by support for inequitable and masculinity norms. Our findings also suggest that the newly developed Macho scale is comparable to the well-established inequitable GEM scale. However, the GEM appears to be more robust than the Macho scale.

These findings are consistent with other studies that show support of masculinity and inequitable gender norms encourages men to have multiple sex partners and puts them at risk for not seeking accurate risk reduction information^{16,33} due to their reluctance to use health care facilities. Additionally, research conducted by Siu and colleagues among men in Uganda also revealed that aspects of masculinity pertaining to reputation undermine uptake of HIV testing and treatment services.³⁶ The need to include 'masculinity' in HIV prevention programs to reduce men's vulnerability to HIV acquisition has been highlighted in studies conducted in the United States^{37–40} and in developing countries such as Brazil, India³³ and Mozambique.⁹

Over 50% of the men in our study reported having multiple sexual partners within the past 12 months, which is considerably higher than what has been reported in other high-risk settings, such as sub-Saharan Africa.^{8,41–43} Several studies have consistently revealed a high prevalence (>50% in most instances) of having multiple sex partners among males (especially younger men) in Jamaica.^{24,25,28,29} Although condoms are widely available in Jamaica, as most of the

HIV prevention programs promote condom use,¹⁵ and some progress in condom use has been made over the years,²⁴ condom use at last sex among individuals is still relatively low (less than 60%), as shown by our study and others.^{8,15,28–30} Although our findings, as well as others, have shown a relatively higher rate of condom use ($\geq 75\%$) with nonregular partners,^{24,44} there is still a great need for innovative interventions to promote safer sex, given the high proportion of men reporting multiple sexual partners and the low prevalence of consistent condom use (31%) among men in our study. Additionally, only 36% of the men reported HIV testing in the past 12 months, suggesting that the majority of men may not be aware of their HIV status.

Men with a lower level of education were more likely to support masculinity and inequitable gender norms. Therefore, to effectively influence gender norms and risk behaviours that increase men's vulnerability to HIV acquisition, a sustainable multilevel approach is needed. Interventions need to involve parents, schools, churches, the greater community and policy reform, especially in the area of providing sexual and reproductive health services to minors in order to promote new ideals of manhood and gender identity.^{5,6,33,45} This approach could also be strengthened by targeting men at commonly visited social sites such as bars and sporting activities.⁴⁶ The need for development and implementation of culturally relevant interventions to reduce risk behaviours among Jamaica's youth has been documented in other studies.^{8,12,38,44} Although attitudes towards gender norms are changeable,¹⁵ it is likely to be a challenging and gradual process, which ideally should be addressed early in life.³³ Modifiable social and cultural behaviours are central to reducing HIV transmission, especially in this resource-poor setting, given that there is still no vaccine and treatment is costly.⁴⁷ Interventions involving interactive group education and social media campaigns among young men to change gender attitudes and promote safer sexual behaviours have revealed promising results in Brazil, India and Nicaragua.^{20,33}

Although the current findings contribute to the understanding of the association between gender norms and sexual behaviours in Jamaica, this study has several limitations that must be taken into consideration when interpreting the results. First, the cross-sectional study design used does not allow us to demonstrate causality. Second, all of our assessments rely on self-reported data. The study could potentially be affected by social desirability bias, especially since all of the interviewers were females. However, all interviewers were trained before conducting this study in an effort to reduce any effects due to this bias. Third, most of the sexual behaviours relate to a 1-year time period. Hence the study could be affected by recall bias. Although we recruited participants from all of the government-operated hospitals in the WRHA, which serves a wide cross-section of the population, it should be noted that individuals of upper middle to high socioeconomic status might be under-represented at these facilities. Although we included visitors (those not seeking health care) to the hospitals in our sample to reduce the effect of selection bias, we did not record the percentage of men who were visitors. Since younger age was also associated with having multiple sex partners in this study, it is likely that the difference in reports of multiple sex partners in

the community and hospital sample is attributed to age rather than selection bias.

Despite these limitations, our study calls attention to the need for involving men in HIV prevention interventions and in addressing gender norms that encourage high-risk sexual behaviour among men, especially young men. This could contribute to strengthening the country's HIV prevention and control programs. To effectively change attitudes towards gender norms that increase men's vulnerability to HIV acquisition, concerted efforts must be made to invest in long-term sustainable interventions that involve key agents of socialisation such as schools, churches and community-based organisations. It is imperative that these messages are infused in agents of socialisation early in life, since it will be extremely difficult to transform deep-rooted ideologies of masculinity and inequitable gender norms during adulthood. Jamaica's Ministry of Education recently mandated that Health and Family Life Education should be taught as a core subject in schools, starting at the early childhood level. This policy seeks to promote healthy lifestyles and reduce risky sexual behaviours among students.⁴⁸ Thus it may be feasible to include gender norms in the school-based curriculum in Jamaica. This study underscores the need for further research to assess the effect of interventions designed to address masculinity, inequitable gender norms and sexual behaviours, especially among younger Jamaican men.

Conflicts of interest

None declared.

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