

GENDER NORMS, MASCULINE GENDER-ROLE STRAIN, AND HIV RISK
BEHAVIORS AMONG MEN IN RURAL SOUTH AFRICA

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A dissertation submitted to the faculty of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the
Department of Health Behavior.

Chapel Hill
2014

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ABSTRACT

ANN LILLIAN GOTTERT: Gender Norms, Masculine Gender-Role Strain, and HIV Risk Behaviors
Among Men in Rural South Africa
(Under the direction of Clare Barrington)

Introduction: Studies suggest strong links between inequitable gender norms and men's HIV risk behaviors in South Africa, where one-fifth of adults are HIV-positive. Masculine gender-role strain (MGRS), the psychological strain men experience from trying to live up to expectations of themselves as men, had not previously been measured or applied in HIV prevention research in the African setting. The aims of this mixed-methods study among men in Mpumalanga province were to evaluate measures of gender norms and MGRS, examine relationships between these constructs and key HIV risk behaviors, and qualitatively explore men's experience of MGRS.

Methods: Quantitative data came from community surveys with 581 men ages 18 to 35. We conducted factor analyses to assess the factor structure, validity, and reliability of the Gender Equitable Men's scale (GEMS) and Gender Role Conflict/Stress (GRC/S) scale. We then used logistic regression to examine the impact of inequitable gender norms and MGRS on three HIV risk behaviors. Finally, we conducted qualitative interviews with 18 men and analyzed data using both narrative and coding procedures.

Results: The unidimensional GEMS and multidimensional GRC/S scale were valid and reliable. Prevalence of sexual partner concurrency in the previous last 12 months was 38.0%, 13.4% of men reported perpetrating intimate partner violence (IPV) in that period, and 19.9% abused alcohol. In multivariate analyses, more inequitable gender norms and higher MGRS were each significantly associated with an increased odds of concurrency, IPV perpetration, and alcohol abuse. Qualitative findings supported the salience of MGRS in men's lives. Men experienced all three

theoretical sub-types of MGRS. Most common was *discrepancy strain* from unemployment; two-thirds of men were unmarried and unable to establish their own households and become providers. Some men also experienced *trauma strain* from intense peer pressure to sexually exploit women. Finally, participants described *dysfunction strain* from restricting emotions and abusing alcohol, which contributed to family violence.

Conclusion: Social constructions of masculinity shape HIV risk in Mpumalanga. We underscore recent calls to scale up gender transformative programs and recommend exploring complementary strategies to reduce the three sub-types of MGRS grounded in a local understanding of male vulnerabilities.

To Colby and Lily

ACKNOWLEDGEMENTS

Many people contributed to the completion of this dissertation. I extend my deepest gratitude to my chair and advisor Dr. Clare Barrington, who guided me through both the doctoral program and the dissertation process. Her generous instruction, advice, and mentorship gave me the skills and confidence needed to complete this dissertation and further my career in public health. I am also grateful to each of my committee members for their support and guidance: Drs. Suzanne Maman, Audrey Pettifor, and Luz McNaughton-Reyes at UNC and Dr. Catherine MacPhail at the University of the Witwatersrand (Wits) in South Africa.

This work would also not have been possible without my husband Colby's unfailing support, patience, and encouragement. Along with being a wonderful husband and father to our lovely daughter Lily, Colby is also a fantastic filmmaker. Together we produced a series of short films profiling "Transformation stories" of three individuals who participated in the Community Mobilization intervention described in this dissertation. This experience gave me greater insight into the experiences of community members who were working toward enacting healthier behaviors in their lives. I would also like to thank my parents, Marcy and Bob Rundquist, as well as Colby's parents, Leslie and Peter Gottert, for their love and support.

I am particularly indebted to Drs. Pettifor, Maman, and MacPhail, as well as Dr. Sheri Lippman at UCSF and Dr. Kathy Kahn at Wits, for welcoming my work on their visionary Community Mobilization study in Mpumalanga. I would like to thank other study team members in South Africa; in particular, Dumisani Rebombo and Dean Peacock from Sonke Gender Justice provided their thoughts and feedback on many of the ideas presented in this dissertation. The Community Mobilizers served as a source of inspiration for my work. The qualitative field workers Ellah Sihlangu and Violet (Nkateko) Ndlovu dedicated their interviewing skills, local knowledge, and

commitment to the qualitative interviews with men. I am also grateful to the Agincourt Health and Population Unit (AHPU) for providing the invaluable staff and resources that made both my quantitative and qualitative studies possible. Rhian Twine and Simon Khoza from the Learning, Information Dissemination and Networking with the Community (LINC) Office, as well as members of the Community Advisory Group, also provided invaluable assistance and advice on design and recruitment for the qualitative study. Finally, I would like to thank all participants of both the quantitative and qualitative studies who shared their time and their thoughts with us.

Back at UNC, I would like to sincerely thank Dr. Susan Ennett, Doctoral Program Director, as well as other faculty in the Department of Health Behavior for the excellent training they provide to all lucky doctoral students. I owe thanks to Dr. Cathy Zimmer at the UNC ODUM Institute for Research in Social Science, who generously provided statistical consultation on structural equation modeling and factor analysis in the Mplus software.

This dissertation research was supported by a Ruth L. Kirschstein National Research Service Institutional STD/HIV Pre-Doctoral Training Award (National Institutes of Health DHHS/NIH/NIAID: 5 T32 AI 07001-35) through the University of North Carolina at Chapel Hill Institute for Global Health & Infectious Diseases. The National Institute of Mental Health provided funding for the parent study for this research (1RO1MH087118, A. Pettifor, PI).

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LIST OF ABBREVIATIONS

AHDSS	Agincourt Health and Demographic Surveillance System
AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-retroviral Therapy
AOR	Adjusted odds ratio
AUDIT	Alcohol Use Disorders Identification Test
CCT	Conditional Cash Transfer
CFA	Confirmatory factor analysis
CI	Confidence interval
CM	Community mobilization
EFA	Exploratory factor analysis
GEMS	Gender Equitable Men's Scale
GRC/S	Gender Role Conflict/Stress (scale)
HIV	Human Immunodeficiency Virus
IPV	Intimate partner violence
IRB	Institutional Review Board
LINC	Learning, Information Dissemination and Networking with the Community office
MGRS	Masculine gender-role strain
MRC	Medical Research Council
NIH	National Institutes of Health
OR	Odds ratio
STI	Sexually transmitted infection
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNC-CH	University of North Carolina at Chapel Hill
WHO	World Health Organization

CHAPTER 1: INTRODUCTION AND SPECIFIC AIMS

Problem Statement

The HIV epidemic in South Africa is the largest in the world. There are 6.4 million South Africans infected with the virus and a prevalence of 18.8% among adults ages 15–49 (1). Two groups are disproportionately impacted: one-third of black African women ages 20–34 are HIV-positive, as are one-quarter of black African men ages 25–49 (1). Prevalence also varies substantially by province. In Mpumalanga, where this study took place, 22% of all adults are HIV-positive (1) and antenatal clinic data suggests that prevalence among pregnant women has plateaued in recent years at around 35% (2, 3). Nationwide, most HIV transmission occurs through heterosexual sex (1). Key risk behaviors include having multiple sexual partners, a behavior about four times more common among men than women, and inconsistent condom use (1, 4). Intimate partner violence (IPV) and alcohol abuse compound risk of sexual transmission for both men and women (4, 5). More effective prevention strategies are needed, especially those that address men’s behavior and include them in solutions (6).

Worldwide, gender norms—beliefs about appropriate roles and behavior for men versus women—are consistently one of the strongest predictors of HIV risk behaviors (6-8). Gender norms are socially constructed rather than driven by biological differences between the sexes and shape HIV risk in a number of ways (9, 10). For instance, studies in South Africa suggest that inequitable norms can encourage men to have multiple sexual partners, produce power imbalances within intimate relationships—which can limit women’s ability to negotiate safer sex—and can lead to IPV (5, 11-14). Studies also show that gender norms tend to be highly inequitable among both men and women in the country (13, 15, 16) and that many men strongly identify with traditional views of masculinity and hold substantial power over women within relationships (5, 14, 17, 18). Masculine gender-role

strain (MGRS) is a promising theoretical complement to gender norms that has not been applied in the African context and has been largely unexplored in HIV prevention research globally (19, 20). The Gender Role Strain Paradigm defines MGRS as the psychological strain men experience from trying to live up to social or internalized expectations of themselves as men (19). When men cannot meet socially positive masculine expectations, like providing for their family, they may turn to alternate means of gaining self-esteem and social status as men, such as through sexual prowess, and seek to reassert power and control over women (19, 21). Engaging in these harmful behaviors can then produce even more strain, leading to a negative, self-perpetuating cycle (19). MGRS is among the most common constructs measured in masculinity studies in Western countries and has been shown to be associated with men's anxiety, depression, IPV perpetration, and alcohol abuse (22-27).

In fact, MGRS may be especially pertinent to understanding HIV risk in the South African context. Qualitative and ethnographic studies describe how the legacy of apartheid, social marginalization, and high unemployment mean that few men can 'become men' by working, marrying, and becoming a head of household, compelling many to enact strategies for defining themselves as men by asserting power over women (28-32). In addition, many men perceive new national discourse and policies promoting gender equality and women's rights as serving to usurp the already meager employment opportunities available and make off-limits the few other roles left by which they can define themselves as men (29, 30, 32). Further, in South Africa and beyond, experience from programs designed to transform gender norms shows that many men support gender equality in the abstract but are unwilling or unable to implement more gender equitable practices in their own relationships, impeding prevention efforts (33-35).

Study Purpose

The overarching goal of this dissertation was to better understand how gender role expectations affect key HIV risk behaviors among men in Mpumalanga province in order to develop more effective prevention programs. Specifically, we evaluated measures of gender norms and MGRS among men in Mpumalanga (Aim 1), assessed relationships between gender norms, MGRS,

and key HIV risk behaviors (Aim 2), and explored men's experience of MGRS in more depth through qualitative interviews (Aim 3).

Specific Aims and Study Design

In this mixed-methods study we drew on both quantitative and qualitative methods to address the three specific aims. Aims 1 and 2 involved secondary analyses using data from the baseline survey of the NIMH-funded study *Effects of Community Mobilization for the Prevention of HIV in Young South African Women* (n=581 men) collected in early 2012. For Aim 3, we conducted and analyzed data from individual qualitative interviews with 18 men in late 2013.

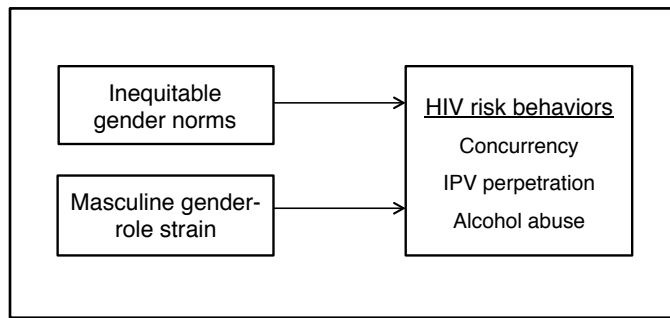
Aim 1: To evaluate measures of inequitable gender norms and masculine gender-role strain (MGRS) among men in Mpumalanga, South Africa.

In Aim 1 we evaluated the validity and reliability of measures of gender norms and MGRS. To measure gender norms we used the Gender Equitable Men's Scale (GEMS), now a commonly used scale in sexual and reproductive health and violence prevention research worldwide (8, 15). To measure MGRS we developed a multidimensional scale called the Gender Role Conflict/Stress (GRC/S) scale by combining two other validated scales used primarily in the United States, the Gender Role Conflict Scale and Masculine Gender-Role Stress Scale (22, 36). For the GEMS and GRC/S scales, we conducted an exploratory factor analysis to identify the most plausible factor structure, then used confirmatory factor analysis to evaluate the validity of this factor structure. We also assessed scale reliability and convergent validity.

Aim 2: To examine relationships between inequitable gender norms, MGRS and HIV risk behaviors (sexual partner concurrency, IPV perpetration and alcohol abuse) among men in Mpumalanga.

Using the scales refined and validated in Aim 1, in Aim 2 we used multivariate logistic regression to test hypotheses that holding more inequitable gender norms and having higher MGRS would be significantly associated with an increased odds of reporting three HIV risk behaviors: sexual partner concurrency, IPV perpetration, and alcohol abuse (Figure 1.1). Control variables included age, education, employment status, and marital status.

Figure 1.1. Conceptual model of Aim 2



Aim 3: To understand MGRS in Mpumalanga in more depth and in men’s own words and to interpret quantitative findings about the influence of MGRS on men’s HIV risk behavior.

Finally, in Aim 3 we developed a richer understanding of MGRS and its relationship to HIV risk behaviors through qualitative interviews with 18 men ages 19–35 from the same study area of varying family situations and employment backgrounds. We asked them about the most important roles to them in their families and communities, the challenges they face in trying to fill these roles, and their hopes for the future for men in their communities. We used both narrative and coding procedures to analyze the data.

Significance

To date, most HIV-related research and programming has focused on women when applying a gender perspective, despite the fact that most men hold power over women in relationships, affecting HIV risk for both (6, 33). Our study advances the literature on three different behaviors among men that drive HIV risk in South Africa and sub-Saharan Africa more broadly. Our study is also the first to apply the Gender Role Strain Paradigm in the African setting and the multidimensional GRC/S scale we developed is a promising new tool for future research and program evaluations. Using data from a large random community sample, we empirically tested theoretical relationships between gender constructs and the key HIV risk behaviors among men. The qualitative study then provided a richer perspective on men’s experience of MGRS grounded in men’s own voices. Findings from this mixed-methods study suggest ways to strengthen current gender

programming and generate ideas for approaches to address MGRS through intervention, currently lacking worldwide.

Organization of the Dissertation

This dissertation has seven chapters. Chapter 1 provides an introduction to the dissertation. Chapter 2 provides background information on the HIV epidemic, men's risk behaviors in South Africa, and the theoretical and empirical basis for the study. Chapter 3 provides an overview of the study including the study's three aims, research questions, and hypotheses, as well as describing the research design and methods. Chapter 4 presents the results from Aim 1 in a manuscript on the conceptualization and measurement of inequitable gender norms and MGRS. Chapter 5 presents the results from Aim 2 in a manuscript on the impact of inequitable gender norms and MGRS on men's HIV risk behaviors. Chapter 6 presents the results from Aim 3 in a manuscript on the qualitative study of MGRS in Mpumalanga. Finally, Chapter 7 concludes the dissertation by discussing integrated findings from the three study aims, study strengths and limitations, and implications for future research and public health practice.

CHAPTER 2: BACKGROUND AND SIGNIFICANCE

The HIV Epidemic in South Africa and Mpumalanga Province

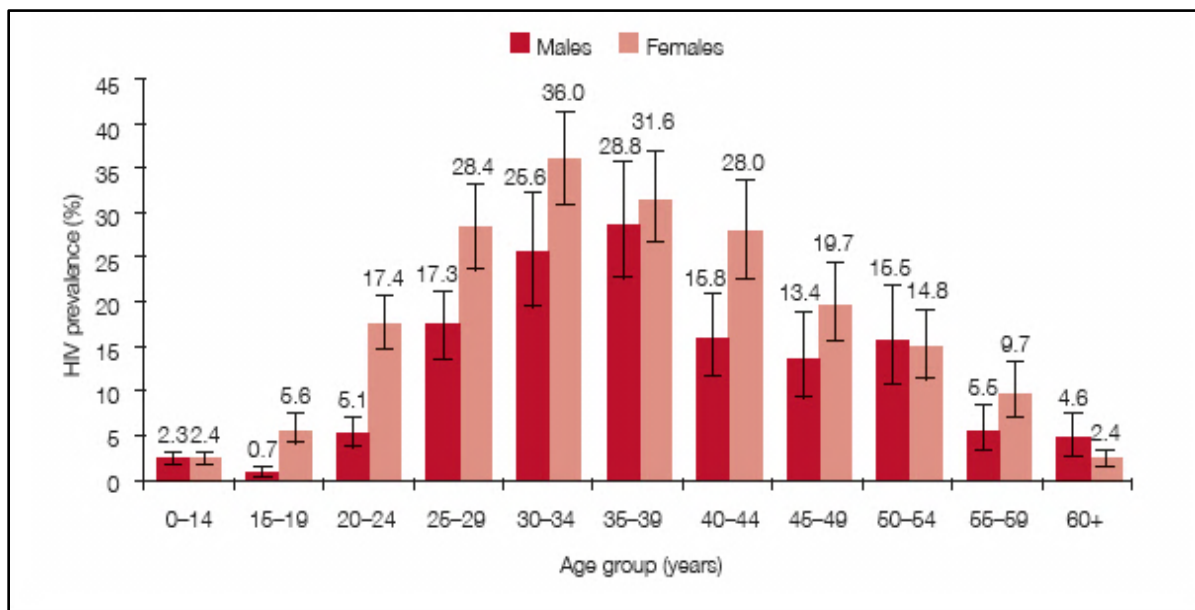
Continuing High HIV Prevalence and Incidence

With an estimated 6.4 million people living with HIV, South Africa's epidemic is the largest in the world (1). Heterosexual sex is the main mode of transmission (1, 37). Four national household surveys conducted in 2002, 2005, 2008, and 2012 show that prevalence grew slightly among the adult population aged 15–49, from 15.6% to 16.2% to 16.9% to 18.8%, respectively (1). Over this time, HIV incidence nationwide appears to have stabilized, with a non-significant decline among adults aged 15–49 between the periods of 2002–2005 and 2005–2008 (38). However, during 2012 alone, an estimated 396,000 new HIV infections occurred in this age group (1). In a prospective, population-based cohort study that directly measured individual seroconversion in rural KwaZulu-Natal province, Barnighausen et al. (2008) found a very high incidence rate among both women and men, at 7.9/100 person-years and 5.1/100 person-years, respectively (39).

Reflecting the substantial social and economic inequalities present in the country, prevalence varies enormously by gender, ethnicity, age group, and location, among other factors. HIV rates among women are more than twice as high as those of men in the age groups 20–24 and 25–29 (Figure 2.1) (1). About a third of black African women ages 20–34 are living with HIV, as are one-quarter of black African men ages 25–49 (1). Similar disparities by gender emerged from a nationally representative household survey among young people age 15–24 by Pettifor et al. (2005), which found that young women were significantly more likely to be HIV positive than young men (15.5% versus 4.8%; $p < 0.01$) and also found a strong disparity by race, especially among Black African women (vs. women of other race; AOR 8.33, 95% CI, 4.15–16.71, $p < 0.01$) (4).

Figure 2.1. HIV prevalence, by age and sex, South Africa 2012

(Source: Shisana et al. (2014) (1))



Variation by Urban/Rural Residence and Province

Although nationally HIV prevalence is higher in urban areas than in rural areas (1, 4), many of the districts with the highest prevalence are rural. For example, a study in a rural district of KwaZulu-Natal province showed one of the highest population-based prevalence documented worldwide, with 27% of women and 13.5% of men infected, and even higher levels among age sub-groups (40). Prevalence varies widely by province, from 7.9% in the Western Cape to 27.9% in KwaZulu-Natal in 2012 (1). In Mpumalanga, the largely rural province where our study took place, 21.8% of adults ages 15–49 are HIV positive, the second highest prevalence among South Africa’s nine provinces (1). This level has stayed roughly the same since 2002 (1). Antenatal clinic data from Mpumalanga also suggests that prevalence among pregnant women ages 15–49 is high and has stayed relatively stable since 2005, at around 35% (Figure 2.2) (2, 3).

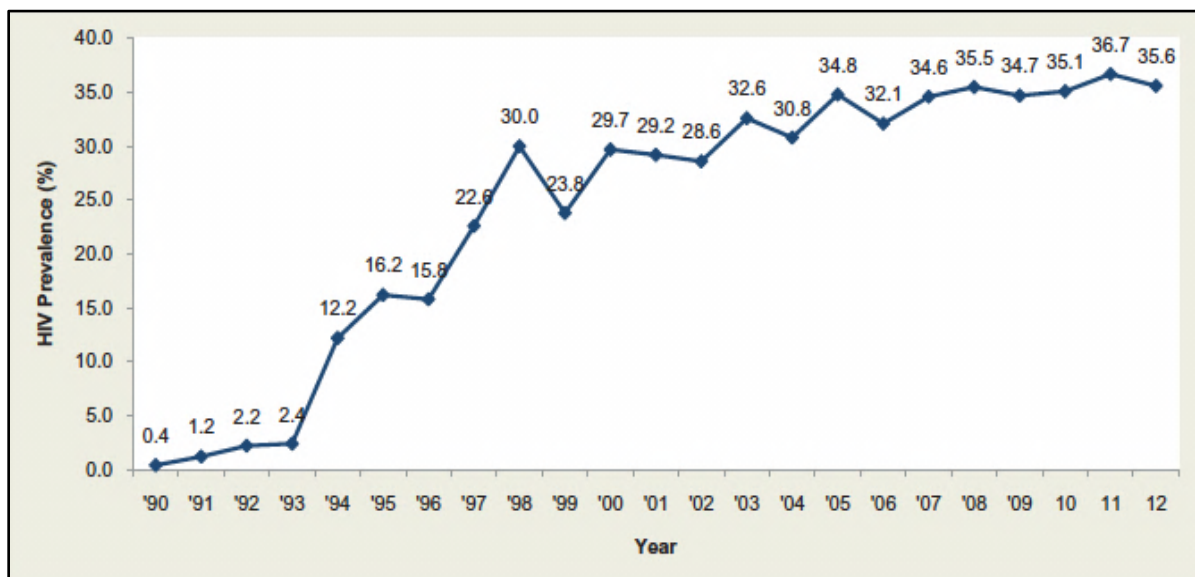
HIV Status Awareness, Treatment, and AIDS Mortality

Although a majority (66%) of adults nationwide report ever having been tested for HIV, and two-thirds of these had tested in the past year, HIV status awareness (having been tested and received

results) remains relatively low (1). The 2012 national survey, which included HIV testing, found significantly higher rates of awareness of HIV status among women than men: 55.0% of HIV-positive women and 45.0% of HIV-negative women were aware of their HIV status at the time they were tested for the survey, compared to 37.8% and 35.6% respectively (HIV positive and HIV negative) of their male counterparts (1). However, this represents a substantial increase in status awareness over the past decade, and in fact is among the highest rates in the world (1).

Figure 2.2. HIV epidemic curve among antenatal women, Mpumalanga 1990 to 2012

(Source: National Department of Health, South Africa (2012) (3))



Working toward universal access to treatment, in the past decade South Africa has established the largest antiretroviral treatment (ART) program in the world, with an estimated 2 million people on ART by mid-2012 (1). This represents close to a doubling of the 2008 rate; however only 31% of the total estimated number of people living with HIV nationwide are receiving treatment (1). The projected number of annual deaths from AIDS has risen steeply since 1999, from around 100,000 people in 1999 to a plateau in 2010 at around 200,000, and the annual number of projected AIDS deaths now equals the number of non-AIDS deaths from all other causes (41). In the study area within Mpumalanga province, HIV/AIDS and tuberculosis were the leading causes of

death among adults (~45%) between 1999 and 2006 and largely drove the significant increase in adult mortality over that time period (42).

How Did Prevalence Get So High?

The first two decades of the epidemic in South Africa saw an inadequate national response characterized by denial, lack of political will, and poor implementation of policies and programs (43). This slow start to HIV prevention and treatment contributed to the growth of the epidemic to today's alarming levels and substantially changed the dynamics of risk for South Africans. Today, continuing social and structural inequalities, including gender inequalities, serve to sustain a risk environment that promotes substantial vulnerability to HIV, especially among women.

Key HIV Risk Behaviors and the Role Men Play

In South Africa, as in Southern Africa, the greatest behavioral risk factors for HIV are having multiple partners and having unprotected sex (37). Intersecting with these risk factors are the practices of age mixing/cross-generational sex, violence against women, and alcohol abuse. The epidemiological evidence for each of these behaviors will be reviewed briefly below, with a particular focus on the role of men's behavior.

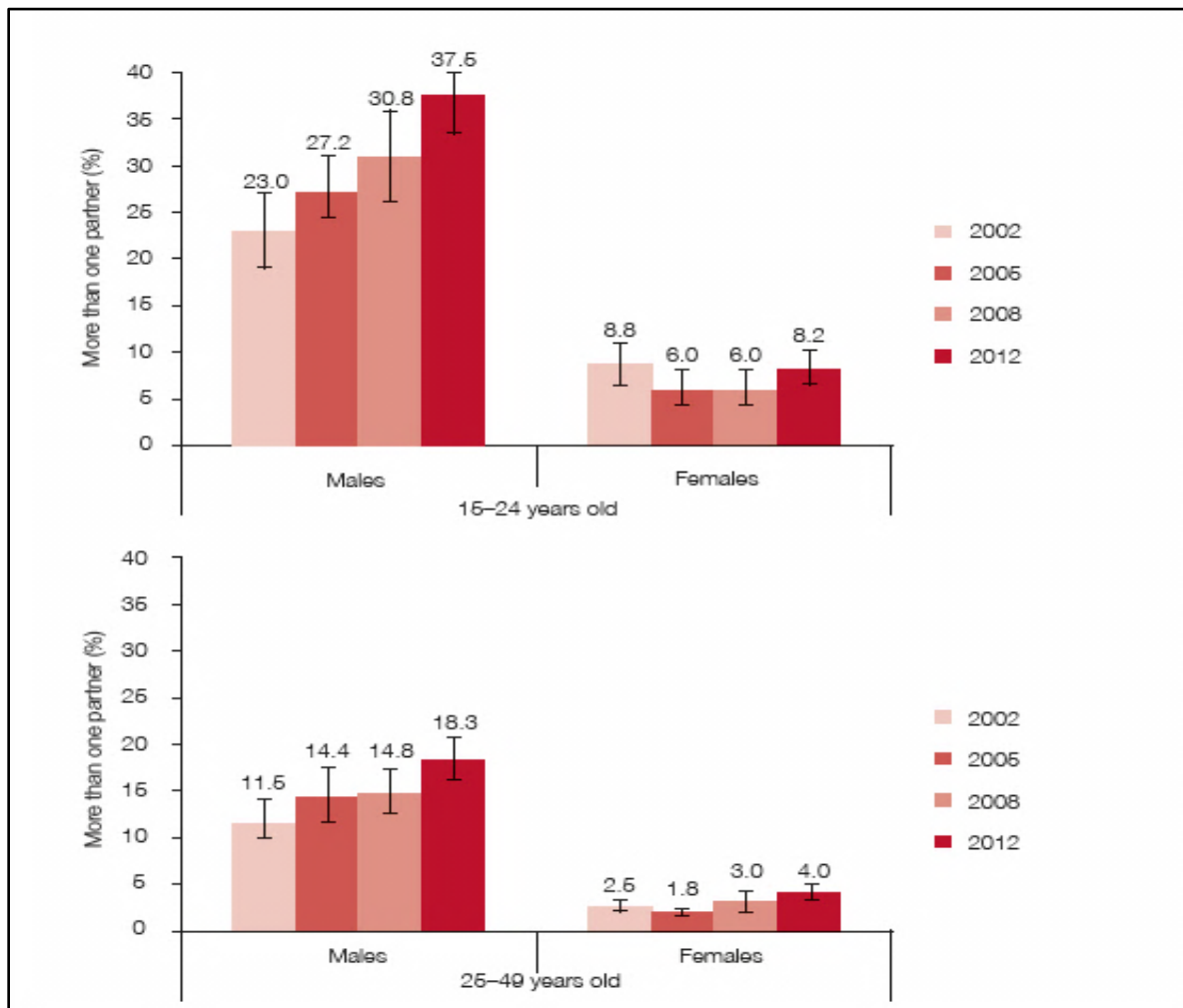
Multiple and Concurrent Sexual Partners

Having multiple partners is a well-established risk factor for HIV in sub-Saharan Africa and South Africa (4, 37). Indeed, partner reduction has been key in the few examples of population-level declines in prevalence, of which Uganda provides the clearest illustration (44). Nationwide in South Africa in 2012, 20.1% of men ages 15 and over reported that they had more than one sexual partner in the previous 12 months, compared to 4.6% of their female counterparts (1). Among men aged 15–24 there has been a significant increase in multiple partnerships over time, from 23.0% in 2002 to 37.5% in 2012, while the percentages were both low and stable (6–8%) across this period among their female counterparts (Figure 2.3) (1). Similar trends emerged from a study among 14–35 years olds in a rural area of Limpopo province, where multiple partnerships increased significantly between 2001

and 2004, from 26.1% to 32.1% in men and from 5.7% to 8.7% in women (45). In Mpumalanga, 13.7% of adults age 15+ had multiple partners in the past 12 months, however this was not broken down by gender (1). This 2012 figure represents an increase from levels at around 10% between 2002 and 2008 and the third highest rate among the nine provinces (1). The increase in multiple partnerships is not unique to South Africa; according to UNAIDS, recent evidence from several other countries in sub-Saharan Africa indicates a significant increase in men's number of sexual partners (including Burkina Faso, Congo, Côte d'Ivoire, Ethiopia, Gabon, Guyana, Rwanda, Uganda, the United Republic of Tanzania, and Zimbabwe) (46).

Figure 2.3. Percentage of adults aged 15 years and older who reported having more than one sexual partner in the past 12 months by age group, South Africa 2002, 2005, 2008, and 2012.

(Source: Shisana et al. (2014)(1))



There is also a proposed link between concurrency, defined as having more than one sexual partner overlapping in time, and HIV risk (47-49). Unfortunately, few studies follow current UNAIDS recommendations to measure concurrency based on a partner grid that identifies overlap in partnership timing and instead use number of partners in a past given amount of time as a proxy for concurrency (49). One recent study that used a partner grid to measure concurrency in South Africa among a nationally representative sample of 15–24 year olds found that 25% of men and 5% of women reported engaging in concurrent relationships over the past 12 months, compared to 5% of men and 5% of women reporting serial monogamy (49). Interestingly, this study found that concurrency was associated with HIV among women but not men, which the authors suggest may reflect women's lower ability to negotiate condom use or refuse sex in these relationships (49). Thus, having multiple sexual partners, which is much more common for men than women in South Africa and usually involves concurrent partnerships, is an important risk factor for HIV.

Age Mixing

The practice of age mixing or cross-generational sex, especially older men having sex with younger women, is thought to be associated with increased HIV risk in Southern Africa (50, 51). This increased risk may be due to the fact that older men often have higher HIV infection rates than adolescent and young men, and young women's power to negotiate condom use is often compromised by age disparities and economic dependence (51, 52). In South Africa, studies have found that young women who have sex with men five or more years older than themselves are more likely to be HIV-infected, compared to women who have sex with men within five years of their own age or the same age or younger (depending on the study) (4, 53). Men who have sex with women five years or younger than themselves (versus within 5 years of their own age) are also at higher risk for HIV (53). However, recent longitudinal studies tracking young HIV-negative women over several years have not confirmed the effect of age disparity on HIV risk (54). Nationwide in the 2012 survey, 33.7% of female respondents aged 15–19 reported having had a partner more than five years their senior (1),

representing a substantial increase from 18.5% in 2005 and 27.6% in 2008 (53). Similarly high rates were found in another national survey of young people (4).

Inconsistent Condom Use

Consistent condom use is highly effective in preventing sexual transmission of HIV (55). Nationwide, 36.2% of sexually active adults ages 15 and older used a condom during their last sexual encounter (39.4% in Mpumalanga) (1). Men were more likely than women to use a condom (38.6% vs. 33.6%) (1). *Consistent* condom use, however, was lower, at 29.5% among men and 25.2% among women (1). Other recent studies have also found low rates of consistent condom use (4, 56). For example, among sexually experienced youth ages 15–24 in a different national survey, although 57% of men and 48% of women reported that they used a condom at last sex, the majority also reported that they did not always use a condom with their most recent sexual partner (61 and 71%, respectively) (4). The same survey found that inconsistent condom use was significantly associated with HIV infection (4). Trends in condom use across the four national HIV surveys suggest that among all age groups, condom use increased substantially between 2002 and 2008 but declined significantly again by 2012 (1).

Intimate Partner Violence (IPV)

Violence and the threat of violence by men against women can contribute directly to HIV transmission through forced or coercive sex with an infected partner and more indirectly by limiting women's ability to negotiate safe sexual behaviors with their male partners (37, 57). As in many other countries, it is difficult to find national statistics about rates of IPV in South Africa. The only nationally representative survey on IPV found that 31% of South African women had experienced physical IPV at some point in their current relationship (58). Jewkes et al. (2010) found that having experienced physical and/or sexual IPV significantly increased the incident risk of HIV infection among young South African women in a rural area of the Eastern Cape, accounting for 12% of the population-attributable risk for HIV (5). Related to sexual IPV, a nationally representative household

survey found that the 10% of young women who experienced forced sex were almost six times more likely to inconsistently use condoms than women who hadn't and that inconsistent condom use was, in turn, significantly associated with HIV infection (14). Rape is also very common in South Africa and has been shown to increase HIV risk (18, 59). A study in the Eastern Cape and KwaZulu-Natal provinces found that 27.6% of men reported having raped a woman or girl (59), and research in a Cape Town township found that more than one in five men reported using the threat of force or force to gain sexual access to a woman in their lifetime (18).

Alcohol Abuse

Alcohol abuse, defined as a pattern of drinking that results in harm to one's health, interpersonal relationships, or ability to work (60), is an important risk factor for HIV in sub-Saharan Africa (61-63). In a meta-analysis of African studies, Fisher et al. (2007) found that compared with nondrinkers, the pooled estimates of HIV risk were 1.57 (95% CI=1.33–1.86) for non-problem drinkers versus 2.04 (95% CI=1.61–2.58) for problem drinkers, a statistically significant difference ($z=2.08$, $P < 0.04$) (62). Alcohol use, and especially alcohol abuse/problem drinking, is believed to influence individuals' cognitive processes such as reasoning ability and judgment and exacerbate risk-taking tendencies (63). Alcohol abuse has been linked to having multiple and concurrent sexual partners, having unprotected sex, and paying for sex (64-66) as well as perpetrating IPV (67, 68). In addition, venues that serve alcohol are often the same places where sex partners meet (69, 70). Forty percent of South African men and 15% of women drink alcohol, with significant numbers drinking heavily (53), and women's alcohol-related HIV risk is often related to their male sex partners' drinking rather than their own drinking (63).

As the above review suggests, HIV risk behavior in South Africa is largely enacted within intimate relationships between men and women and reflects deep-rooted inequalities in society (14, 17, 35, 71, 72). We sought to better understand the gender dynamics of HIV risk in Mpumalanga by asking whether two constructs—gender norms and masculine gender-role strain—are associated with key HIV risk behaviors among men. We chose three behaviors—concurrency, IPV perpetration, and

alcohol abuse—as a focus for our study, because these were expected to be strongly influenced by the gender constructs of interest. The next sections lay out the theoretical basis and empirical evidence for the importance of these constructs to understanding HIV risk on a global level and specifically within South Africa.

Gender Norms As a Driver of HIV Risk

Theoretical Basis

The Theory of Gender and Power serves as an overarching theoretical framework for the three aims of the proposed research. In his influential work *Gender and Power*, R. W. Connell (1987) sought to create a systematic basis for understanding gender and gender relations (9). While recognizing that there are important biological differences between the male and female *sexes*, Connell believed that doctrines of natural difference that assume the biological makeup of our bodies is the foundation of the social relations of *gender* are fundamentally mistaken. Instead, gender roles and relations are socially constructed and historically embedded and individuals are socialized into and internalize their respective roles (9). According to the Theory of Gender and Power, three major social structures shape gender relations: 1) the *gendered division of power*, 2) the *gendered division of labor*, and 3) the *structure of social norms and attachments*. These structures characterize the gendered relationships between men and women; exist at societal, institutional, and individual levels; and produce exposures that shape health behaviors and outcomes for men and women (9). These three structures are helpful in organizing our understanding of traditional expectations of masculinity and how gender inequality can shape vulnerability to HIV, as described next (10).

Gendered division of power. Gender is negotiated in part through relationships of power. Social power of men over women has multiple dimensions, such as force (e.g. violence); balance of advantage in the household, workplace, and major institutions (corporations, government, universities); and the ability to set the agenda and the terms by which issues are discussed (9). As men and women observe their parents, extended families, and peers, they form beliefs about appropriate

gendered power roles within relationships (11). Biology and “God’s will” are often invoked to justify these structures of hierarchy in South Africa and in this way they are presented as the natural order of family relations (32). Gendered power is also strongly shaped and reinforced by cultural traditions such as by patrilineal marriage traditions in Southern Africa—in which wives leave their families to join their husbands in their homes (73)—and the continuing tradition of bridewealth (74).

Power imbalances within a relationship affect each partner’s ability to negotiate safe sex on equal terms. For example, having low power and control in a relationship often limits women’s ability to negotiate condom use and refuse unwanted sex with their male partners, experiences that have been linked to HIV infection in South Africa (5, 14). Not only men but women as well tend to be socialized to accept (and perceive as normal) male control of sexual decision-making (75). For example, a study in South Africa found that young women tended to identify their ideal relationship as one in which the man made the decisions, including the use of condoms and the timing of sex (76). Power imbalances within couples also tend to be associated with lower levels of couple communication about sexual and reproductive health, which can limit each partner’s awareness of their counterpart’s wishes and can lead to health-damaging decisions when men exert uninformed or misinformed control over decision-making (11, 77). Finally, extreme power imbalances within couples can lead directly to physical, sexual, and psychological IPV, which can directly increase HIV transmission and also serves to further reinforce women’s inability to negotiate safer sex (14, 17, 77).

Gendered division of labor. Historically, particular types of work have been allocated to men and women, which over time becomes a “social rule” and entrenched through “differential skilling,” among other things (9). This gendered division of labor supports the creation of gender-based career expectations, the exclusion of most women from opportunities for the accumulation of wealth and capital, and the allocation of childcare and other unpaid work to women. Work role norms in which the man is expected to be the income provider and the woman the nurturer mean that women tend to depend on their male partner for financial assets, increasing power and decision-making imbalance in the relationship and constraining women’s sexual choices and behavior (10, 78). Women’s financial

dependence on men also contributes to transactional sex and age-mixing practices in South Africa (14, 51). Young women often seek casual relationships with older men, who tend to have more secure employment and assets, as a way of obtaining money for necessities, as well as social, emotional, and symbolic capital in some instances (51). Although the gendered division of labor is true on an aggregate level, it is also critical to note that in some settings like rural South Africa many men are also limited in their ability to generate income, challenging gendered expectations of men to work and provide for their family (11).

Structure of social norms and attachments. This structure dictates normative or stereotypical behavior for men versus women, including norms around sexual behavior (9). These gendered expectations of appropriate roles and behavior are learned in relationships over the life course and are reproduced in institutions and cultural practices (6, 79). The sexual double standard, for example, is evident in statistics concerning the sexual behavior of men versus women. Relative to women, men tend to have more sexual partners over their lives, are more likely to have concurrent partners, and are more likely to pursue commercial sex workers as partners (80). In South Africa, men are much more likely than women to have multiple partners and to have casual partners outside of marriage (1, 4).

In sum, the Theory of Gender and Power serves as an overarching theoretical framework for understanding the ways in which gender norms can shape HIV risk, which has also been supported by a wealth of research to date.

Empirical Evidence Linking Gender Norms to HIV Risk Behavior

The World Health Organization, UNAIDS, and other international governing bodies recognize gender norms as a key driver of HIV vulnerability and gender-based violence (6, 78, 81). Studies worldwide have shown that men who believe strongly in traditional notions of masculinity have more sexual partners, a higher level of adversarial sexual beliefs, lower consistency of condom use, and a higher concern about condoms reducing male pleasure (81, 82). A review of 268 qualitative studies worldwide also showed that gender norms and differential expectations about appropriate sexual behaviors for young men and women are key factors influencing the sexual

behaviors of young people (7). Similarly, in the United States, the National Survey on Adolescent Males showed that young men's adherence to traditional views of manhood emerged as the strongest predictor of risk-taking behaviors like unsafe sexual practices, substance use, violence, and delinquency (83). In addition, extensive research using the Male Role Attitudes Scale, a measure of masculine ideology, primarily with African American, Hispanic, and White men in the United States, has found that higher scores on this measure predict less consistent condom use, coercive sexual behavior, a higher number of sexual partners, adversarial beliefs about female-male relations, alcohol and drug use, and negative attitudes toward male responsibility for contraception (20).

Research worldwide using the Gender Equitable Men Scale (GEMS) to measure gender norms has also consistently found them to be associated with HIV risk behavior (8, 15, 84). In Brazil, Pulerwitz & Barker (2008) found that support for more equitable gender norms was significantly associated with less self-reported partner violence and more contraceptive use among young men (8). One of the largest studies to date on gender norms and sexual behavior is the International Men and Gender Equality Survey (IMAGES), which was carried out with men and women ages 18–59 in six countries: Brazil, Chile, Croatia, India, Mexico, and Rwanda, and used GEMS (15). This study found that across all six countries, men who held more inequitable gender norms were significantly more likely to have perpetrated physical and sexual intimate partner violence, to have paid for sex, and to abuse alcohol, and were less likely to communicate with their partner about personal problems and to have been tested for HIV (15). Next we review evidence regarding how gender norms influence key HIV risk behaviors in South Africa.

Multiple and concurrent sexual partners. In South Africa, adherence to more inequitable gender norms is associated with a higher likelihood of having multiple partners among men. For instance, Harrison et al. (2006) found that men in relationships characterized by more equal power between partners had fewer sexual partners in the prior 3 months than those in relationships with less equal power (12). Our knowledge of how gender norms specifically affect concurrency is limited because few studies in Southern Africa have carefully measured concurrency per se—the extent to

which someone has sexual partners that overlap in time—instead assessing the number of partners in a past period of time (48, 49). However, a recent study using the recommended method of measurement found that concurrency among young South African women was associated with relationship power imbalances (49). Qualitative research in South Africa has also found that, in particular, the practice of concurrently having a main partner and other partners is a common arrangement for men and is strongly linked to norms of masculinity (47).

IPV perpetration. Inequitable gender norms and unequal relationship power are associated with greater likelihood of IPV in South Africa. In a longitudinal analysis looking at incident HIV infection, Jewkes et al. (2010) found that women with low relationship power were significantly more likely to have experienced more than one episode of physical or sexual IPV than were women with medium or high relationship power and that at the end of the study, women with low relationship power were significantly more likely to have become infected with HIV (5). Further, relationship power accounted for 14% of the population-attributable risk for HIV infection (5). Another study by Kalichman et al. (2007) among men ages 18+ in a Cape Town township found that aspects of masculine ideology and hostile attitudes toward women were significantly associated with perpetrating sexual assault (18). Qualitative research with young men and women in Gauteng Province, South Africa, found that male dominance and violence were normalized by many participants through their beliefs that men need sex and the idea that male sexual desire is uncontrollable and immediate (35). However, this study also found that many young people are challenging the normative power of men over women. For example, some young men who were against the use of force for any reason in sexual relationships spoke about ‘the old days’ when it was considered appropriate to dominate and beat women and about the changes that have come with the greater gender equality promoted by the South African government since the end of apartheid (35).

Alcohol abuse. There is little evidence from South Africa relating to the influence of gender norms on alcohol abuse. However, traditional gender norms condone drinking among men more than women and alcohol use behavior may reflect masculine traits of risk-taking and aggressiveness (85).

The six-country IMAGES study found that in Chile, Croatia, and Mexico, men who held more inequitable gender norms were much more likely to abuse alcohol than men who held more equitable norms (15). In addition, a study among adolescents in the United States found that traditional gender role attitudes largely accounted for observed gender differences in alcohol use and abuse (86).

Intervention evidence. Further evidence of the importance of gender norms to sexual and reproductive health and violence behaviors comes from evaluations of interventions that seek to change these behaviors by changing gender norms. A 2008 review by the World Health Organization (WHO) of 58 evaluation studies found that programs that incorporated a “gender transformative” approach that seeks to directly challenge inequitable gender norms and promote more gender-equitable relationships between men and women were more effective in producing behavior change than programs that used a “gender-sensitive” or “gender-neutral” approach (6). For example, the Stepping Stones and Soul City programs in South Africa decreased self-reported use of physical, sexual, and psychological violence in intimate relationships (6, 87) and the “Somos Diferentes, Somos Iguales” (“We are Different, We are Equal”) campaign in Nicaragua increased condom use among young people (88). However, the WHO review also found that few of the programs go beyond the pilot stage, or a relatively short-term timeframe, and suggested that more evidence is needed on how to achieve the large-scale and sustained reach necessary to change gender norms and power dynamics (6). A more recent review (2013) of such programs drew similar conclusions about their effectiveness as well as the continued need for more rigorous evaluations and longer program implementation periods (34).

Reducing gender inequalities and gender-based violence is also a strategic focus of the Government of South Africa’s response to HIV. The National Strategic Plans for HIV/AIDS/STIs for 2007–2011 and 2012–2016 include a number of objectives related to promoting gender equality, including empowering women, educating about women’s rights and human rights, addressing gender-based violence, and promoting male sexual health (71, 89). The current strategic plan (2012–2016) also specifically calls for the implementation of interventions to address gender norms (89). These

strategic plans were created after extensive consultation with civil society and other stakeholders and have been hailed as examples of good policy (90). It remains unclear, however, how these kinds of public policies supporting gender equality are translating into changes at the community or individual levels.

How Equitable Are Gender Norms in South Africa?

A partner study to the six-country IMAGES study was carried out by the Medical Research Council of South Africa in three districts in the Eastern Cape and KwaZulu-Natal provinces and also used the GEM scale to measure gender norms (15). This study found that, on the whole, South African men held more inequitable gender norms than those from any other IMAGES country (15). In terms of specific gender norms, half of men agreed with the statement that women sometimes deserve to be beaten (vs. an average of 33% across other countries), 60% said that a man should have the final say on decisions at home (vs. 46%), and 85% of men agreed that to be a man it is important to be tough (vs. 43%) (15). Men in South Africa also tended to perform much less housework and childcare work than women, reflecting inequitable norms—a finding that was common across the six IMAGES countries (15). For example, among men in South Africa who lived with their children, only half said they “often played with children, helped with homework or fixed food for them.” Men who did not live with their children commonly failed to perceive themselves as obligated to provide financial or social support, regardless of ability. Men’s communication with their partner about problems or challenges faced at home or work, in the family or community, which is characteristic of more equitable relationships, was lower in South Africa than other IMAGES countries. For example, among married or cohabiting men, only half had discussed problems with their partner in the previous fortnight (15).

In another study in South Africa, Harrison et al. (2006) looked at six culturally adapted measures of masculinity they developed for a study with young people in rural KwaZulu-Natal with a particular focus on how these norms play out within the context of intimate relationships (12). Interestingly, no differences by gender were found for any of these six scales. Men and women’s

mean scores were generally positive (i.e., representing equitable gender norms) for egalitarian sexual scripts and mutuality in relationships but were negative (i.e., representing inequitable gender norms) for violence in relationships, power in relationships, male dominance scripts, and hyper-romanticism (12). This supports findings from related qualitative work by this research team that men's and women's gender norms related to sexual relationships are changing but that enactment of new roles is a slow and inconsistent process (31).

In terms of support for broad notions of gender equality, a study with 3500 South African men and women by the Unilever Institute found mixed support (91). Sixty-one percent of respondents believed that men and women are equal, 66% believed that men and women should earn the same amount, and 50% that women are treated unfairly. However, 73% also believed that men should be the head of households and 64% thought that they should be the primary breadwinner in the family. This information, together with evidence of inequitable norms related to intimate relationships held by South African men further suggests that national efforts to promote ideals of gender equality are not yet fully translating into more equitable beliefs behavior within intimate relationships in a sustained manner.

Yet qualitative research in South Africa and beyond has highlighted that many young men are challenging dominant norms of masculinity (32, 35). Indeed, despite the inequitable gender norms environment in which many young men grow up, research in a number of settings has shown substantial variation in the degree to which individual men conform to these norms (8, 35, 92-94). This is true even among men within the same social setting and peer groups, suggesting that certain norms are already changing and can be harnessed for HIV prevention interventions. The six-country IMAGES study found substantial variation in how equitable men's gender norms were, both between countries and within each country, suggesting that there are likely to be reasons underlying these differences that could be identified and targeted through intervention (15). Additionally, within each country, levels of support for specific norms varied substantially, again suggesting that certain more equitable norms could serve as an entry-point for changing others (15).

Changing Expectations of Masculinity in South Africa

Anthropological accounts of the 19th- to mid-20th-century early colonial South Africa provide a starting place for understanding how masculinities, including those related to sexuality, are changing. Traditional practices in rural South Africa, especially related to men's "initiation" into manhood, involved a relatively high degree of sexual education and regulation linked to an ideal of manhood that was responsible and respectful (95, 96). Although traditional courting practices in rural South Africa allowed a man to have many potential wives at a time (but a woman to have only one potential husband), these allowances only went so far. Young men with more than one girlfriend, including married men who courted younger single (and thus eligible) women, were called to account for their intention or financial ability to marry these women, particularly by parents with a heavy stake in their daughter's future marriage (32). At the same time, Christianity, which became interwoven with tradition, was also subtly but powerfully undermining this public courting of multiple women, with many preachers encouraging men to remain monogamous (74).

Yet these kinds of social controls on sexuality existed alongside traditional social hierarchies placing men above women and more powerful (and often older) men above other (and often younger 'uninitiated') men. According to Morrell (2001):

"Colonialism may have destroyed the material base of the African economies, but it did not destroy the history which was woven into a myriad of gendered rituals which served to legitimate the sexual division of labour and male power. In the countryside, older men commanded respect. They were part of a gender system which had, at its apex, the chief. He dispensed rights to communal land to men alone. ... Public life by and large was a world that belonged to men. ... While the rights of women were limited, there was a presumption about the importance of community and the essential role that women played within the household and the larger social units." (28, p. 13)

Thus, expectations of masculinity are strong and they both reflect the region's turbulent past and have been a cause of that turbulent past (28). Coming into second half of 20th century, South Africa under the white male rule of apartheid, forced removals from land, and increasing poverty and unemployment among black South Africans eroded men's ability to "become men" by working, paying bridewealth, getting married, and becoming head of a household (32, 96). More and more men

were also being drawn away from their rural homes to find work in urban townships and the mines, places characterized by increasing dependence on violence, both by supervisors to maintain authority and by black men to resist it, validating violence as a way of dealing with power inequalities (28). At the same time, women were necessarily assuming increasing responsibility for the family's needs, and in rural areas, legal changes have given women access to land, allowed them to open bank accounts, and in some ways freed them from dependence (28). Today, the expansion of formal education for both women and men, urbanization, and national policy positions promoting gender equality (for example, under the Constitution) are further setting a normative standard of gender equality in the public's eye (11, 32, 74).

According to Morrell (2001), responses of men in South Africa to these kinds of changes can be loosely grouped into three categories: reactive or defensive, accommodating, and responsive or progressive (28). The absence of widespread opposition to the improvement of women's conditions suggests that most men may be accommodating the changes (28). This is evident in recent research showing that many young men are taking on certain more equitable roles within sexual relationships. For example, many studies in sub-Saharan Africa are finding that men are engaging in sexual relationships to prove their masculinity but also because they seek companionship, intimacy, and pleasure (11). In South Africa, O'Sullivan et al. (2006) found that most male participants' reports of sexual interactions suggested that they endorsed negotiation and respect for partners' interest and desire (31). A nationwide study on concurrency practices in South Africa also found that although peer norms among men are recognized as generally favoring promiscuity, many of the men interviewed were asserting new values by actively choosing to remain monogamous (47). Certainly, the devastation of families due to HIV/AIDS is also causing some men to question gender norms and attitudes that were once unquestionable (11).

Nonetheless, the most common theme emerging from recent qualitative and ethnographic work on changing masculinities in South Africa is that despite new ideals of gender equality, the enactment of these new roles is inconsistent and fully formed alternative models have not

materialized (11, 31, 32, 74). Many researchers suggest that new norms and pressures are causing a crisis of male identity, especially given the lack of men's recourse to traditional masculine identities like being employed and successful (29-32, 74). In a qualitative study in Mpumalanga, Sideris (2004) emphasizes the anxiety and ambivalence induced when men sense that more traditional gender roles are in question, leading one participant to remark, "You have to change but you don't know how!" (32, p. 45). Together these findings lead us to consider another important gender construct: masculine gender-role strain.

Masculine Gender-Role Strain: An Underexplored Construct in HIV Prevention Research

Theoretical Basis

"Engaging men in gender equality requires being empathetic with men's lived experiences—the unspoken depression, suicidal thoughts, high levels of childhood experiences of violence, and their high levels of work-related stress. But being empathetic toward the structural conditions of men's lives is not to make excuses for the violent and oppressive practices of some men. It is, instead, an affirmation of the need to move beyond a superficial understanding of gender equality toward addressing the structural—but changeable—factors that underpin it." (15, p. 61)

As the passage above suggests, the current discourse on gender norms and masculinities reflects a growing recognition that gender norms do not operate in isolation from other socio-economic inequalities and stressors. Masculine gender-role strain (MGRS), the stress men experience from trying to meet or failing to meet expected masculine roles, is a promising theoretical complement to gender norms constructs (20). MGRS has received increasing attention in psychology and health behavior research in recent years, particularly in the United States in relation to men's depression, anxiety, perpetration of intimate partner violence, and alcohol/substance abuse (22-24, 26, 27). However, the construct has been largely unexplored in HIV prevention research and has not been measured in the African context.

The MGRS construct has its theoretical basis in the Gender Role Strain Paradigm, which posits that men tend to experience negative psychological and physiological effects from their attempts to meet perceived societal standards of the male role (19). This theory suggests that three

sub-types of MGRS—discrepancy strain, dysfunction strain, and trauma strain—interact across the life course to produce the experience of MGRS as a whole.

Discrepancy strain is the strain from negative social feedback and internalized self-judgments from attempting to meet perceived expectations of masculinity, and especially failing to do so (19). Some expectations of masculinity can be seen as more socially positive/less dysfunctional in that they have potentially beneficial results, for example providing for one's family or achieving professionally. However, other expectations, like being aggressive, sexually exploitative, and emotionally restrictive, are inherently dysfunctional in that they lead to self-harm or harming others (21). In general, men try to meet more socially positive/less dysfunctional standards of masculinity first, preferring to avoid more harmful behavior if they can help it. These more socially positive roles and behavior also tend to be more widely accepted by society while more dysfunctional norms may be acceptable in narrower social circles or settings (e.g., certain male peers; bars).

Gender role trauma strain is the strain that results from intense gender socialization processes starting in childhood, which often occur during gender role transitions like reaching puberty, getting married, or becoming a father (19). Trauma strain is conceptualized in the literature as contributing directly to the amount of MGRS a man experiences, as well as heightening men's fear of negative reprisal for violating traditional gender roles (19).

Finally, when men fail to live up to these more socially positive norms of masculinity, they often compensate by turning to more dysfunctional ones. Dysfunction strain is the strain from engaging in these dysfunctional characteristics or behaviors (19, 22). Examples include the three HIV risk behaviors being examined in the proposed study: having concurrent sexual partners, perpetrating IPV, and abusing alcohol. Thus, instead of reducing the overall strain men experience, engaging in dysfunctional behaviors produces even more MGRS, leading to a negative, self-perpetuating cycle.

The anxiety associated with being unable to meet prescribed gender roles may be more debilitating for men than women because the role of provider (vs. nurturer) requires men to leave the private world of the family and engage in hard and often dangerous work, often away from home, and

because conforming to masculine roles requires denial of, or disassociation from, a wide range of emotions (21). In addition, most women, while being similarly threatened with severe sanctions if they fail to conform to feminine gender norms, tend to engage in behaviors that harm themselves rather than others as a result (e.g., through underachievement, depression) (21).

The degree of gender role strain a man experiences is thought to depend in part on the extent to which the gender norms are actually psychologically salient to him (19, 22). It is also crucial to note that gender role strain is not a static state but rather a process by which individuals cope and adapt to it by changing their behavior, by changing their perception of role norms or disengaging from them, or by changing their reference group (19). This suggests that although gender role strain likely exerts a strong effect on men's HIV risk behavior, this effect is also multifaceted and potentially modifiable.

Empirical Evidence Linking MGRS to HIV Risk Behaviors

The gender-role strain construct has not been formally operationalized for research by Pleck or others, limiting the evidence available about its effect on outcomes of interest. The best evidence for a link between MGRS and health comes from U.S. populations related to clinical psychology-related outcomes. Two main lines of research correspond to two scales commonly used since the 1980s that relate to MGRS: O'Neil's Gender Role Conflict Scale and Eisler's Masculine Gender-Role Stress scale (22, 36). Popular reviews of gender measures clearly distinguish these two particular scales from measures of adherence to gender norms because both examine the degree to which adherence to and internalization of traditional gender roles causes stress in an individual's life (20, 97). Both O'Neil (1986; 2008) and Eisler (1987) position their scales as relating to the MGRS construct, although neither claims to measure MGRS directly (22, 36, 98). O'Neil (2008), for example, has suggested that the Gender Role Conflict Scale is most closely related to dysfunction strain rather than the other sub-types (22). Nonetheless, at present these two scales are the closest the field has come to measuring MGRS, and we believe both originate from the same theoretical notion as the Gender-Role Strain Paradigm and also tap into the overall experience of MGRS to some extent.

A 2008 review of 260 studies using the Gender Role Conflict Scale found that across diverse groups of men (including a few international samples, although none in Africa), the Gender Role Conflict Scale was significantly associated with intrapersonal problems like depression, stress, anxiety, low self-esteem, and alcohol and substance use (22). Within interpersonal functioning, the Gender Role Conflict Scale and/or Masculine Gender Role Stress scale have been found to be significantly associated with abuse and violence against women, problems with intimacy, and a lack of closeness in relationships (22-24).

Evidence for the association between MGRS and the three HIV risk behaviors assessed in our study is reviewed below. No articles in the peer-reviewed literature on HIV in South Africa were found that explicitly examined this construct, either quantitatively or qualitatively, therefore we draw on anecdotal evidence from that country as well as other research done worldwide.

Multiple and concurrent sexual partners. MGRS has rarely been examined in relation to sexual risk behaviors. Studies by Malebranche et al. (2012) and Bingham et al. (2013) among Black, bisexually active men who have sex with men (MSM) in the United States found significant associations between higher Gender Role Conflict Scale scores and unprotected vaginal or anal intercourse with women but not unprotected anal intercourse with men (99, 100). The reason for the null finding for unprotected intercourse with men is unclear; the authors suggest that the GRC scale or theoretical construct may be less relevant to homosexual sexual interactions or that male partners may have more power to negotiate condom use than female partners (99, 100). Two qualitative studies in the United States also specifically applied the MGRS construct to understand sexual risk behavior. Kerrigan et al. (2007) conducted qualitative interviews with African American adolescents in Baltimore, Maryland, and found that young men were experiencing heightened gender-role strain, including all three sub-types, and that this strain was linked to their sexual behavior and HIV/sexually transmitted infection (STI) risk (101). Another qualitative study by Fields et al. (2014) used MGRS to better understand sexual risk behavior among MSM across qualitative studies in three New York cities and Atlanta, Georgia, and found that these men's conflict and pressure to conform to masculine

expectations despite their homosexuality led to psychological distress, efforts to camouflage their homosexuality, and strategies to prove their masculinity, which appeared to increase sexual risk behavior and HIV risk in multiple ways (102). Although the MGRS construct has not specifically been applied in South African studies, a number of qualitative studies in that country suggest that inability to fulfill certain traditional expectations of masculinity, such as providing for one's family, leads men to compensate by filling others, one of the most common of which is maintaining multiple sexual partnerships (29, 32, 47, 103).

IPV perpetration. Studies have suggested a significant association between MGRS and IPV perpetration, with most evidence coming from the United States. The strain and sense of insecurity among men may be a central motivation for being aggressive toward women and struggling to maintain control within relationships, including through sex (23). The review of 260 studies using the Gender Role Conflict Scale identified 22 studies that together found that the Gender Role Conflict Scale was significantly related to a range of thoughts, attitudes, and behaviors that are abusive and violent toward women (22). Eisler's Masculine Gender-Role Stress scale has also been empirically linked to IPV risk (25). Two studies using this scale found that MGRS mediates the relationship between masculinity norms and IPV risk (23, 24). Further, Gallagher & Parrott (2011) found that MGRS mediates this relationship for certain masculinity norms dimensions but not others, reinforcing the importance of examining separately men's adherence to different gender norms (23).

A number of qualitative studies from South Africa suggest that the strain associated with conforming to perceived masculine ideals may lead to violence perpetration. For example studies have shown that IPV often occurs in situations in which the female partner is perceived by the man as stepping out of line by behaving in ways that threatened men's sense of authority in the relationship and undermined their public presentation of themselves as men in control (32, 74). Findings from a quantitative study in Cape Town also suggest that two indicators conceptually related to MGRS—perceived challenges to male control in relationships and women's refusal of sex—were significantly

associated with men's perpetration of sexual violence against intimate partners in the past 10 years (104).

Alcohol abuse. A number of studies in the United States have found that the Gender Role Conflict Scale is associated with alcohol use and/or abuse (22, 26, 27). Alcohol use may help men temper gendered self-expectations and manage stress from unmet gender roles (22). Specifically, alcohol use can be seen as a form of avoidant or maladaptive coping with stress, to which men tend to turn more than women (85, 105). In South Africa, although no research has explicitly examined the association between the MGRS construct and alcohol use, studies have shown that the pressures of living in poverty shape alcohol use and HIV risk (106).

Intervention evidence. Little intervention evidence is available for MGRS because there are very few programs in the United States or globally that specifically seek to reduce MGRS and even fewer that have attempted to measure changes in MGRS or behavior. In the United States these primarily involve psychological counseling. Such efforts have produced some success in reducing MGRS, particularly *restrictive emotionality* (22, 107), but have not yet directly addressed health behaviors. A four-session group intervention to reduce MGRS as part of a dating violence prevention for U.S. college students led to reductions in *restrictive emotionality* (violence was not measured) (108). An international program called the ManKind Project focuses on men's-only peer support groups and has also demonstrated some success in reducing *success, power, competition, restrictive emotionality*, and depression symptoms as well as bolstering perceived social support and life satisfaction (109). However, the project does not clearly address health behaviors and has not been clearly described in the literature to date nor rigorously evaluated.

Gauging Levels of MGRS in the South African Context

Qualitative and ethnographic research provides some insights into levels of MGRS in South Africa. In her ethnographic study in rural Mpumalanga, Sideris (2004) sought out the perspectives of individual men who, in their private lives, were renegotiating "what it means to be a man" by transgressing norms—rejecting violence, participating in the household division of labor, and giving

up control of the family income (32). These men were still experiencing a high degree of uncertainty and ambivalence around re-examining their role as head of the household. As they attempted to embrace greater equity within family relations, and as the foundation of their identity as men as head of the household was increasingly challenged, they displayed anxiety associated with not knowing how to validate their sense of themselves as men. Sideris suggests that these anxieties and hostilities men experience can illuminate the social challenges to male domination and emerging changes in gender relations that are underway (32).

Relating to strain around sexuality, in qualitative research with secondary students in KwaZulu-Natal O'Sullivan et al. (2006) found that participants commonly referred to social expectations that they must live up to—for example, describing how it is the man's "duty" to initiate sex with their girlfriends and an essential aspect of being a man (31). One man explained that he always initiated "...Because I want to show her that there is nothing I don't know about sex;" another man felt it was important that he initiate "Because if I break up with her, I don't want [her] to go everywhere telling people that she told me many things about sex" (31, p. 104). However, there was not pressure to conform to all expectations of sexual behavior. For example, in relation to women's ability to refuse sex, most participants (both male and female) indicated that it was important for men and women to communicate their lack of interest, problems, or concerns, and some women said that it did not bother their partner if they didn't want to have sex. Thus, many men feel pressure to perform sexually as a mark of manhood, but not unconditionally.

In this chapter we documented the severity of the HIV epidemic and men's risk behaviors in South Africa and established the theoretical and empirical basis for our study, with implications for understanding and intervening on men's behavior in South Africa and beyond. We now turn to the present study conducted in Mpumalanga, South Africa, from 2012 to 2014.

CHAPTER 3: STUDY OVERVIEW

The overarching goal of this dissertation was to better understand how gender role expectations affect key HIV risk behaviors among men in Mpumalanga in order to develop more effective prevention programs. We used a mixed-methods design, drawing on both quantitative and qualitative methods to address the three specific aims. Aims 1 and 2 involve a secondary analysis of quantitative data from the baseline survey of the NIMH-funded study *Effects of Community Mobilization for the Prevention of HIV in Young South African Women* (n=581 men). Aim 3 involved conducting and analyzing data from a qualitative study with 18 men from the same study area.

Study Aims, Research Questions, and Hypotheses

Below are research questions (RQ) that directed the research done under each Aim. Based on a review of theory and evidence in the literature, a number of hypotheses are proposed under Aim 2.

Aim 1: To evaluate measures of inequitable gender norms and masculine gender-role strain (MGRS) among men in Mpumalanga, South Africa.

For each scale:

RQ1. What does exploratory factor analysis suggest is the scale's factor structure?

RQ2. Does the scale demonstrate structural validity? That is, is the factor structure (number of factors and items within them) suggested by exploratory factor analysis confirmed in the confirmatory factor analysis (do measures of model fit meet pre-established cutoff criteria)?

If the scale has multiple factors, is there evidence for a second-order factor?

RQ3. How reliable is the scale, including each factor and any higher-order factor found?

RQ4. Does the scale demonstrate convergent validity? That is, is it shown to be associated with variables it should theoretically be related to?

RQ5. Does the scale demonstrate predictive validity? That is, is it shown to be associated with hypothesized outcomes? (To be examined in Aim 2)

Aim 2: To examine relationships between inequitable gender norms, MGRS and HIV risk behaviors (sexual partner concurrency, IPV perpetration and alcohol abuse) among men in Mpumalanga.

RQ1. Are inequitable gender norms associated with each HIV risk behavior (concurrency, IPV perpetration, alcohol abuse)?

Hypothesis: Holding more inequitable gender norms will be significantly and positively associated with concurrency, IPV perpetration, and alcohol abuse, controlling for age, education, employment status, marital status, and MGRS.

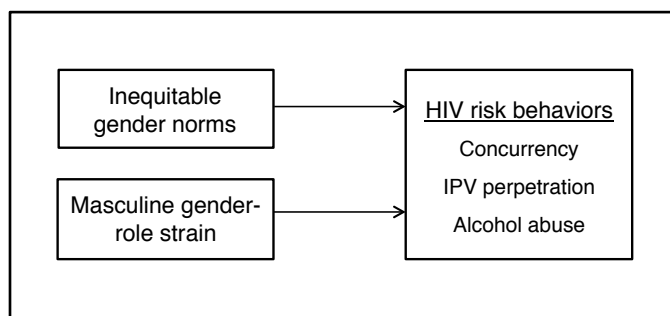
RQ2. Is MGRS associated with each HIV risk behavior?

Hypothesis: Higher MGRS will be significantly and positively associated with concurrency, IPV perpetration, and alcohol abuse, controlling for age, education, employment status, marital status, and inequitable gender norms.

RQ3. If sub-dimensions of inequitable gender norms and MGRS are found in factor analysis, which are associated with each HIV risk behavior? (exploratory analyses)

A conceptual model of Aim 2 is reproduced in Figure 3.1 here, for ease of reference.

Figure 3.1. Conceptual model of Aim 2.



Aim 3: To understand MGRS in Mpumalanga in more depth and in men's own words and to interpret quantitative findings about the influence of MGRS on men's HIV risk behavior.

RQ1. How do participants describe what it means to be a man and to be a woman?

RQ2. What roles are most important to men in their families and communities? How do they describe what these roles mean to them, and how did they learn about them?

RQ3. To what extent do men feel they are playing these different types of roles? What challenges have they faced in doing so?

RQ4. How salient is the main proposition of the Gender Role Strain Paradigm, that the experience of trying, and failing, to live up to masculine expectations produces strain, which then leads men to engage in dysfunctional behaviors that harm themselves and others?

RQ5. How salient are the three sub-types of MGRS to men—discrepancy strain, trauma strain, and dysfunction strain? What are local examples of each of these three sub-types?

RQ6. To what extent and in what ways do men link strain they identify with behaviors like having multiple sexual partners, perpetrating IPV, or abusing alcohol?

Mixed-Methods Approach

Integrating quantitative and qualitative methodologies provided a more comprehensive picture of the complex phenomena being studied than either approach used alone (110, 111). Our quantitative study provided objective measurement of variables, hypothesis tests and generalizable results but insufficient nuance, particularly about MGRS and its connections to HIV risk behaviors. We followed this analysis with a qualitative study shaped by its results, which provided a richer perspective grounded in men's own voices that helped us interpret quantitative findings.

Parent Study Overview

Parent Study Description

The parent study from which the quantitative data came is an ongoing NIMH-funded, randomized controlled trial that seeks to test the separate and combined efficacy of two interventions to reduce HIV vulnerability among young women in Mpumalanga, South Africa: providing

conditional cash transfers to help them stay in school (Conditional Cash Transfer arm) and changing the inequitable gender norms, particularly among men, that create an enabling environment for risk behaviors (Community Mobilization arm). The Conditional Cash Transfer arm of the study is also funded by the HIV Prevention Trials Network (HPTN, Study 068). Young women in 22 villages of the study area were individually randomized to receive the cash transfer, while 11 of these 22 villages were randomized to receive the community mobilization intervention.

For the dissertation study we used data from the baseline (pre-intervention) survey of the Community Mobilization arm only. However, it is helpful to understand the intervention being implemented because it relates to the subject of the present study. The goal of the community mobilization intervention, implemented by Sonke Gender Justice for two years from 2012–2014, is to engage young men around the issues of gender norms and HIV risk and to encourage them to take action to protect young women and reduce HIV risk in their communities. A group of 15 “community mobilizers” from the villages were selected and trained to conduct mobilization and outreach activities. Activities included intensive workshops on gender roles, human rights, HIV, and violence; one-on-one engagement with community members; and activities in the community like “ambush” theater and rallies, among others. These mobilization activities have been widely used by organizations like Engender Health and Sonke Gender Justice with young men across South Africa. The community mobilization approach is believed to hold particular promise in reaching large groups of individuals and having a lasting effect on community norms and dynamics (112-114).

The study is one of the first worldwide to rigorously evaluate community mobilization efforts focused on men that aim to reduce HIV vulnerability. The intervention is being evaluated by two cross-sectional household surveys of young people ages 18–35 in the 22 intervention and control villages, conducted immediately prior to the intervention in 2012 as well as post-intervention in 2014 (2 years later). The primary endpoint for the parent study is changes in gender norms (as measured by GEMS). Secondary endpoints include community mobilization variables and HIV risk behaviors (concurrent partnerships, unprotected sex acts, intimate partner violence).

The parent study represents a collaboration between the University of North Carolina at Chapel Hill (UNC-CH); the University of California, San Francisco (UCSF); and two South African institutions based at the University of the Witwatersrand (Wits) in South Africa: the Wits Reproductive Health and HIV Institute (WRHI) based in Johannesburg and the Medical Research Council (MRC)/Wits Agincourt Health and Population Unit (AHPU), with offices in both Johannesburg and rural Mpumalanga.

Study Site

The study took place in the Agincourt area of the rural Bushbuckridge sub-district in Mpumalanga Province, located about 500km northeast of Johannesburg, near South Africa's border with Mozambique (see map in Appendix A). Approximately 84,000 individuals live in 14,000 households in 25 villages throughout Agincourt. The MRC/Wits Rural Public Health and Health Transitions Research Unit runs an Agincourt Health and Demographic Surveillance System (AHDSS) in this area (115), which was used as a sampling frame for the study.

The study site is typical of many rural areas in South Africa and is characterized by few employment opportunities, high levels of out-migration for labor, and relative social isolation. The area is dry and densely populated (~170 persons per km²) with household plots too small to support subsistence agriculture. Water shortage is a serious problem, household sanitation is generally poor, and most roads are unpaved.

Field Implementation

The MRC/Wits Agincourt Unit has an office responsible for community relations—the Learning, Information Dissemination and Networking with the Community (LINC) Office. Prior to fieldwork this office informed and invited feedback from the host community about this study through meetings with the local municipal offices and ward councilors, as well as community meetings in each village. The study site has formed a Community Advisory Group (CAG) to advise on research in the site and the CAG also screened the consent process and gave advice to the team on

recruitment strategies and possible concerns about the study. The study was also presented to the Community Development Forums that have representation from each study village.

The AHDSS has experienced fieldwork teams that have been conducting household surveys for many years. These teams include a senior supervisor who oversees all data collection on a day-to-day basis. All fieldworkers took part in extensive training covering the research protocol and design, standard operating procedures, computer-assisted personal interviewing (CAPI), and all forms that were used in the field.

Sampling and Recruitment

Descriptions of methods hereafter will refer only to the baseline survey of the Community Mobilization arm because it is this data that will be used in Aims 1 and 2.

A household survey was conducted in 22 villages at baseline from March to June 2012 among a randomly selected cross-section of 1,181 community members 18–35 years old. The age range of 18 to 35 was chosen because it is the age range of sex partners for most young women in the CCT arm of the study, as well as being the group of men with the highest incidence of HIV infection and among whom change in norms and behaviors may be most achievable.

Eligibility criteria for the baseline survey included:

- Men and women ages 18–35 years
- Have lived in study area continuously for the past 12 months
- Able and willing to provide informed consent

Individuals were identified through a census list of all men and women ages 18–35 living in the 22 study villages in Agincourt who had been enumerated by the 2011 AHDSS. For sample selection each household was designated as either male or female, and individuals of that gender in the household were randomly numbered in order (1, 2, 3, etc.). On entering a home, the individual randomly prelisted first was screened for the following more detailed eligibility criteria: person lived in the home, was age 18–35 per confirmed date of birth, and had lived in the study area for the past 12

months. If the first individual did not meet these eligibility criteria, the second was screened, and so on.

Only men were included in this dissertation study. Among 620 eligible men, 581 men were enrolled into the study (94%); 35 refused to participate (6%), and the remaining 2 (<1%) did not enroll for other reasons.

Survey Administration

After eligibility was confirmed and informed consent obtained, the surveys took place in the participant's household and generally lasted 1 to 2 hours. Interviews were conducted in the local language of Shangaan or in English, depending on the respondent's preference, using computer-assisted personal interviewing (CAPI), in which the interviewer reads each question to the respondent, then enters the answer into an electronic form on a laptop computer containing questions, responses, and skip patterns. The survey was translated from English into Shangaan, back-translated, and revised as necessary. As part of the formative research phase, the questionnaire was piloted among 20 users and adjusted accordingly.

Quantitative Methods for Aims 1 and 2

Measures

Gender norms is a latent variable that was measured using an adapted version of the Gender Equitable Men's Scale (GEMS). Pulerwitz and Barker (2008) developed GEMS in Brazil as a tool for evaluating an intervention to change gender norms and reduce HIV risk among young men (8). In contrast to other scales measuring gender norms or masculine ideology, which had primarily been developed and used in the United States, Pulerwitz and Barker's stated intent was to create a scale that was grounded in developing-country realities, could be used for the explicit purpose of program evaluation to examine changes in gender norms as a result of intervention, measured norms related to health outcomes of programmatic interest (particularly sexual and reproductive health and violence), and measured norms around both men's and women's behavior (8). The original GEMS and most

subsequent GEMS include four domains: violence, sexual relationships, reproductive health and disease prevention, and domestic chores and daily life. Within these domains, items represented both inequitable norms and equitable norms and the authors found that these factored out separately (8). Pulerwitz and Barker's original GEMS achieved an overall Cronbach's alpha of 0.81 and the authors found that support for more equitable norms was significantly associated with less self-reported partner violence and more contraceptive use (8).

In the past few years GEMS has been rapidly adopted in research and program evaluations worldwide (6, 15, 84). Most studies include items in the four domains, only include items representing inequitable gender norms, and treat the scale as unidimensional in subsequent analyses, although the scale's factor structure has rarely been evaluated. GEMS has consistently demonstrated good reliability and ability to predict outcomes of interest (6, 15, 84, 116).

GEMS was recently adapted for use in Kenya, Uganda, and Ethiopia. The Ethiopian scale was used as a basis for that of the present study and included 24 items, 18 of which were from the original Pulerwitz & Barker scale, with a Cronbach's alpha of 0.88 (117). The scale for the present study was adapted slightly from this Ethiopian version. We changed the wording of a few items in consultation with local research team members to increase appropriateness for the local social context. This scale was piloted with 50 men to ensure adequate reliability. Before final survey implementation, six reverse-coded items from the original GEMS (8) were added in order to include gender-equitable alongside gender-inequitable norms, for a total of 30 items. We added these gender-equitable items because it is important for interventions not just to change inequitable norms but also to promote equitable ones (for example, related to couples' more open consultation about reproductive decision-making or men's engagement in child care) and for evaluations to be able to assess these changes.

The final 30-item scale included items related to violence, sexual relationships, reproductive health and disease prevention, and domestic chores and daily life (Table 3.1). The set of questions was introduced by the prompt: "*We would now like to ask you some questions about relationships*

between men and women.” Response categories included “Do not agree at all” (1), “Somewhat agree” (2), and “Agree a lot” (3). Most studies worldwide use a 3-point response category for GEMS.

An individual’s GEMS score is the sum of the responses to all items. All items were coded such that a higher score represented holding more inequitable gender norms. We used a standardized GEMS score in regression analyses for ease of interpretation.

Table 3.1. Gender Equitable Men’s Scale (GEMS) Items Included in the Survey

<i>Response categories included “Do not agree at all,” (1) “Somewhat agree,” (2) and “Agree a lot” (3) (R) denotes that the item was reverse coded for data analysis</i>	
<hr/>	
Violence	
	1. There are times when a woman deserves to be beaten.
	2. A woman should tolerate violence to keep her family together.
	3. If a man sees another man beating a woman, he should stop it. (R)
	4. It is alright for a man to beat his wife if she is unfaithful.
	5. A man can hit his wife if she won’t have sex with him.
	6. If someone insults a man he should defend his reputation with force if he has to.
	7. A man using violence against his wife is a private matter that shouldn’t be discussed outside the couple.
Sexual Relationships	
	8. It is the man who decides what type of sex to have.
	9. Men are always ready to have sex.
	10. Men need sex more than women do.
	11. A man should know what his partner likes during sex. (R)
	12. A man needs other women even if things with his wife/partner are fine.
	13. You don’t talk about sex, you just do it.
	14. It disgusts me when I see a man acting like a woman.
	15. A woman should not initiate sex.
	16. A woman who has sex before she marries does not deserve respect.
Reproductive Health and Disease Prevention	
	17. Women who carry condoms on them are easy.
	18. A man should be outraged if his wife/partner asks him to use a condom.
	19. It is a woman’s responsibility to avoid getting pregnant.
	20. Only when a woman has a child is she a real woman.
	21. If a man gets a woman pregnant, the child is the responsibility of both. (R)
	22. A woman can suggest using condoms just like a man can. (R)
	23. A man and a woman should decide together what type of contraceptive to use. (R)
	24. A real man produces a male child.
Domestic Chores & Daily Life	
	25. Changing diapers, giving a bath, and feeding kids are the mother’s responsibility.
	26. A woman’s role is taking care of her home and family.
	27. The husband should decide to buy the major household items.
	28. It is important that a father is present in the lives of his children, even if he is no longer with the mother. (R)
	29. A man should have the final word about decisions in his home.
	30. A woman should obey her husband in all things.

To measure **masculine gender-role strain** we developed a scale for the South African context by combining two validated scales: O’Neil’s Gender Role Conflict Scale (22, 98) and Eisler’s Masculine Gender Role Stress Scale (36). Consequently, we called our scale the Gender Role Conflict/Stress (GRC/S) scale. We decided to combine the two scales instead of using either one in its entirety because we found the resulting set of sub-dimensions and items most applicable to the South African setting and most relevant to the HIV-related outcomes of interest in this study. Both are multi-dimensional scales that can be thought of as capturing observable patterns of MGRS—aspects of masculinities considered most likely to produce psychological strain in a given context (22). Neither of these scales had been previously applied in African countries, which may represent different social and cultural contexts from Western countries.

The Gender Role Conflict Scale was developed in the 1980s by O’Neil et al. in the United States (98) and is now one of the most widely used scales in U.S. masculinities studies (22). It includes a series of first-person statements about the importance of or stress around fulfilling traditional masculine roles and items are worded to tap into psychological strain (e.g., “I worry about”, “...is a measure of my personal worth”) (22, 98). A respondent is asked to rate the extent to which he agrees with each statement. The Gender Role Conflict Scale has four sub-dimensions: *Success, power, competition; Restrictive emotionality; Restrictive affectionate behavior between men; and Conflicts between work and family relations*. This four-factor structure has been confirmed in nearly all U.S. and the few international studies (22). O’Neil (2008) suggests that gender-role conflict relates to all three sub-types of gender role strain to some extent but commented that “Pleck’s dysfunction strain has the most theoretical relevance to GRC because this subtype implies negative outcomes from endorsing restrictive gender role norms” (22, p. 366). The Gender Role Conflict Scale has been shown through numerous studies to have good psychometric properties (validity and reliability) in varied samples, although mostly in Western populations (22).

Like the Gender Role Conflict Scale, Eisler's Masculine Gender-Role Stress scale was also developed in the 1980s in the United States and is intended to tap into men's MGRS (36). However it does so by asking men the extent to which a series of masculine-gender-relevant situations (e.g. "being outperformed at work by a woman") would be stressful to them, with response categories ranging from "not at all stressful" to "extremely stressful" (118). As such, it is more explicitly based on cognitive appraisal of stress than the Gender Role Conflict Scale and may be most closely aligned with discrepancy strain in that it assesses the degree to which respondents would experience particular situations that are discrepant with male role norms as stressful (119). The scale's five sub-dimensions include *Physical inadequacy*, *Emotional inexpressiveness*, *Subordination to women*, *Intellectual inferiority*, and *Performance failure in work and sex*. Although this scale has been used in fewer studies than the Gender Role Conflict Scale, it has consistently demonstrated good reliability and validity (120, 121).

In our study, all three sub-types of gender role strain (discrepancy, dysfunction, and trauma strain) are conceptualized as contributing to and manifesting in MGRS as a whole, which is then operationalized in the scale. As we noted previously, MGRS has not been formally operationalized for research in a scale, by Pleck or others, despite widespread recognition of the utility and importance of this construct within in the psychology and masculinities fields. Nonetheless, although neither O'Neil (1986, 2008) nor Eisler (1987) claim that their scales measure MGRS but rather "relate" to this construct to a certain extent (22, 36, 98), the Gender Role Conflict Scale and Masculine Gender Role Stress Scale are the scales that have come closest to measuring MGRS.

We chose the Gender Role Conflict Scale format as the basis of the adapted scale and included two of its four original sub-dimensions (*Success, power and competition* and *Restrictive emotionality*). We added two sub-dimensions from the Masculine Gender Role Stress Scale (*Subordination to women* and *Physical inadequacy*), changing item wording to correspond to the Gender Role Conflict Scale format. Another sub-dimension from the Masculine Gender Role Stress Scale, *Performance Failure (Work and Sex)*, provided additional content for a number of items in our

Success, power and competition sub-dimension. We reviewed a draft of the resulting MGRS scale with local members of the study team in Mpumalanga, who confirmed that overall the scale had good content (i.e., face) validity and that the sub-dimensions were appropriate. The team recommended dropping seven items, adding one item, and editing the wording of nine other items; these changes were incorporated into the final scale.

The final 28-item GRC/S scale used in the survey, and sources of each item, are included in Table 3.2. All items use the first person and are worded to tap the individual's anxiety and distress. The set of questions was introduced by the prompt: "*In this part of the interview, we would like to ask you some questions about what is important to you as a man.*" Response categories included "Do not agree at all" (1), "Somewhat agree," (2), and "Agree a lot" (3). Having only three response categories diverges from most Gender Role Conflict Scale and Masculine Gender Role Stress Scale applications, which tend to have 5–6 Likert-scale response categories. The three categories for the present study were chosen by the study team to apply across a wide range of questions within the survey based on experience at the site that respondents prefer fewer response categories and because they also make the most sense in the local language.

An individual's GRC/S score is the sum of his responses to all the items. In keeping with the original Gender Role Conflict Scale, all questions are worded such that higher scores are associated with higher MGRS. We used a standardized GRC/S score in regression analyses for ease of interpretation.

Table 3.2. Gender Role Conflict/Stress Scale Items Included in the Survey

<i>Response categories included "Do not agree at all" (1), "Somewhat agree" (2,) and "Agree a lot" (3)</i>		Item source
Success, power, competition		
1. Making money is part of my idea of being a successful man.		O
2. I worry about failing and how it affects my doing well as a man.		O
3. I often feel like I need to be in charge of those around me.		O
4. I like to feel superior to other people.		O
5. I am often concerned about how others evaluate my ability to provide for my family.		O*
6. I strive to be more successful than others.		O
7. I sometimes define my personal value by my ability to make money or find work.		O*, E*
8. Being able to perform sexually is important to me as a man.		E*
9. I feel that I always need to be ready for sex with my partner, even if I am tired.		E*
10. I worry about being unable to become sexually aroused when I want.		E*
11. Having a girlfriend or wife is part of my idea of being a successful man.		(n)
Subordination to Women		
12. Making more money than a woman is a measure of my value and personal worth.		(n)
13. Being outperformed at work by a woman would make me uncomfortable.		E*
14. I would be concerned if my friends knew I live with a woman and did any housework.		E*
15. I do not like to let a woman take control of the situation.		E*
16. I would be concerned if my friends knew I stayed at home during the day with a sick child.		(n)
17. Having a female boss would be difficult for me.		E*
Restrictive Emotionality		
18. I have difficulty telling others I care about them.		O
19. Talking about my feelings during or after sex is difficult for me.		O*
20. I often have trouble finding words to describe how I am feeling.		O
21. I do not like to show my emotions to other people.		O
22. Having someone see me cry would be difficult for me.		E*
23. Affection with other men makes me tense.		O
Physical Inadequacy		
24. Feeling that I am in good physical condition is important to me as a man.		E*
25. Being physically stronger than other men is important to me.		O*
26. It is important to me to know I can drink as much or more than others.		E*
27. I always strive to win in sports competitions.		O*, E*
28. Having sex is part of being a successful man.		(n)

O = O'Neil's Gender Role Conflict Scale; E = Eisler's Masculine Gender Role Stress Scale; * indicates that item wording was modified; (n) = new item

Dependent variables are all dichotomous and included sexual partner concurrency (last 12 months), IPV perpetration (last 12 months), and recent alcohol abuse. The measures used are validated and recommended by WHO and/or UNAIDS (49, 122, 123). Descriptions of these three measures are included in Table 3.3. For concurrency, individuals who had not yet had sex were coded

Table 3.3. Aim 2 Dependent Variables

Variable	Measure	Response categories
Concurrency (last 12 months)	Using a partner grid (124), participants were asked about characteristics of their last 3 partners, including the month and year of first and last sex ("When did you first have sex with this partner?" "When did you last have sex with this partner?") Overlapping dates in the 12 months before the interview were considered concurrent partnerships in that period.	Concurrency-yes (1) Concurrency-no (2)
IPV perpetration (last 12 months)	<p>WHO questionnaire asking men about perpetration of physical or sexual violence against partner, in the last 12 months. The WHO questionnaire has been adapted in South Africa for use with men (122). Items include:</p> <ul style="list-style-type: none"> • My partner twisted my arm or hair, or threw something at me that could hurt me / I did this to my partner • My partner pushed, grabbed, or slapped me / I did this to my partner • My partner used threats to make me have oral or anal sex / I did this to my partner • My partner kicked me, slammed me against a wall, punched me or hit me with something that could hurt / I did this to my partner • My partner beat me up, burned or scalded me on purpose / I did this to my partner • My partner choked me, or used a knife or gun on me / I did this to my partner • My partner used force, like hitting, holding me down, or using a weapon, to make me have sex / I did this to my partner 	<p>Response to each item of 7-item scale is Yes(1)/No(0); Score for "I did this to my partner" was summed, for a range of 0-7</p> <p>Final variable was dichotomized; with IPV perpetration counted as reporting at least one kind of IPV perpetration in the last 12 months</p>
Alcohol abuse (recent)	<p>The Alcohol Use Disorders Identification Test (AUDIT) (123) asking about recent alcohol use, alcohol dependence symptoms, and alcohol-related problems. This scale, developed by the WHO, was validated in a 6-country study (125). Items include:</p> <ul style="list-style-type: none"> • How often do you have a drink containing alcohol? • How many drinks containing alcohol do you have on a typical day when you are drinking? • How often do you have six or more drinks on one occasion? • How often during the last year have you found that you were not able to stop drinking once you had started? • How often during the last year have you failed to do what was normally expected from you because of drinking? • How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session? • How often during the last year have you had a feeling of guilt or remorse after drinking? • How often during the last year have you been unable to remember what happened the night before because you had been drinking? • Have you or someone else been injured as a result of your drinking? • Has a relative, friend, or a doctor or other health worker been concerned about your drinking or suggested that you cut down on your drinking? 	<p>Response options for each item of 10-item questionnaire vary; most range from 0-4; 2 were recoded to range from 0-4. Score was summed, for a range of 0-40</p> <p>Final variable was dichotomized, with a score of 8 or more considered alcohol abuse, following WHO guidelines (123)</p>

as not practicing concurrency. For IPV perpetration, for individuals who had never had an intimate partner we counted this as not perpetrating IPV. The final IPV perpetration variable was dichotomized due to non-normal distribution of the continuous score.

Control variables for Aim 1 included age, educational attainment, employment status, and marital status. Descriptions of these measures are included in Table 3.4. Response categories for marital status and educational attainment were collapsed into fewer categories for regression analyses because of low cell counts in certain categories (widowed; no school, some primary, university or technikon).

Table 3.4. Aim 2 Control Variables

Variable	Measure	Response categories in survey	Final response categories for regression analyses	Level of measurement
Age	How old are you?	Age in years	Same	Continuous
Educational attainment	What is the highest level of education that you have completed?	No school (1) Some primary (2) Completed primary (3) Some high school (4) Completed high school (5) University or technikon (6)	Completed primary or less (1) Some high school (2) Completed high school (3)	Categorical – ordinal (Dummy coded)
Employment status	Have you earned any income of any kind in the last 3 months?	Yes (1) No (0)	Same	Dichotomous
Marital status	What is your current marital status?	Never married (1) Married (legal or traditional) (2) Separated/divorced (3) Widowed (4)	Never married (1) Married (legal or traditional) (2) Separated/divorced/ widowed (3)	Categorical – nominal (Dummy coded)

Preliminary Analyses

Power. To evaluate the probability of correctly rejecting null hypotheses when they are false, we calculated power for bivariate associations between MGRS (sum of 28 GRC/S items) and concurrency in SAS v9.3 (SAS Institute Inc., Cary, NC). MGRS was split in half at the median (into

low MGRS and high MGRS), and a bivariate 2 sample proportions test was used to calculate power. With a sample size of approximately 600 (300 per group), an estimated intra-class correlation (ICC) of concurrency by village of 0.05 (design effect of 2.35, with a cluster size of 28), a hypothesized proportion for concurrency for the low MGRS group of 0.20 (49, 126), and alpha (α) set at 0.05, we determined it would be possible to detect a **0.07 difference in proportions** between the lower MGRS group and higher MGRS group at a **power of 0.87**. This corresponds to an **odds ratio of 1.5**. Therefore, this study was adequately powered to detect effect sizes of interest.

Intra-class correlation. To test the assumption of independence of observations between villages for the three HIV risk behaviors prior to performing regression analyses, we calculated the intra-class correlation (ICC) and design effect. For all three dependent variables (concurrency, IPV perpetration, alcohol abuse), the ICC was below 0.05. In addition, the design effect for all three dependent variables was well below 2.0. These results suggested that neither correcting for an inflated standard error nor multilevel analysis were required (127).

Missing data. Given the rigorous data collection methods of the parent study, missing data were minimal. There were no missing data for HIV risk behaviors or control variables. Two individuals were missing all 28 GRC/S items and were excluded from GRC/S factor analyses and all regression analyses. Otherwise, for GEMS final scale items, six items had 1 missing value each. For GRC/S final scale items, two items had 1 missing value each. In factor analyses, missing data was handled using full information maximum likelihood in Mplus. In creating summed scores for GEMS and GRC/S in Aim 2, missing values on an item were replaced by the mean of all other individuals' scores on that item, as was done for the parent study.

Calculating sampling weights. The sample was weighted to account for differential sampling probabilities and to represent the distribution of men aged 18–35 years in Agincourt based on the 2011 AHDSS. Weights were determined based on the proportion of total eligible households per village, and of total eligible males per household. We used scaled weights in all analyses, such that the sum of the weights equaled the sample size for men and women ($n=1181$).

Aim 1 Factor Analyses

In this section and the one below we briefly describe the general analysis strategy for study Aims 1 and 2. More detailed descriptions of the analyses are presented in the Methods sections of Chapters 4 and 5.

We performed factor analyses for the latent variables gender norms and MGRS using Mplus software (128). We conducted a split-sample exploratory and confirmatory factor analysis (EFA and CFA) (129, 130). Although EFA and CFA are both based on the common factor model, EFA involves determining an appropriate number of factors and the pattern of factor loadings primarily from the data and CFA involves testing hypotheses about a pre-specified number of factors and factor loadings (131).

First, we split the sample of 581 participants in half such that 291 men were randomly sampled to be in the exploratory analysis sample and 290 men to be in the confirmatory analysis sample. For the first half, we used EFA to identify the most plausible factor structure and the items to be retained. We used a scree plot and parallel analysis to suggest a range of number of factors. We based decisions about the factor structure to retain for testing in the CFA on interpretability, significance of factor loadings, and adequacy of reliability of each factor. We then used the second half of the sample to “confirm” this factor structure in the CFA. We assessed the adequacy of initial model fit based on commonly recommended cut-off criteria, added plausible correlated errors and higher order factors, and assessed final model fit. We then calculated reliabilities for each final factor (lower and higher order). Finally, we assessed convergent validity for each scale by testing whether the pattern of associations between the measure and other theoretically related variables conformed to what the theory would predict (132).

This approach of using both EFA and CFA was advantageous for these two scales. GEMS was based on a validated scale from Ethiopia but had not been validated in the South African context (15, 117). The GRC/S scale is a combination of sub-dimensions and items from two other multi-dimensional scales and also had not been validated in South Africa. Therefore, it was beneficial to

conduct EFA for both scales. Further, using CFA to statistically evaluate the factor structure found in EFA provided additional evidence that the factor structure was the best fit for the data (131, 133). The sample size was large enough to accommodate such an analysis— a sample size of about 200 is often considered adequate for each factor analysis (132).

Aim 2 Logistic Regression Analyses

Aim 2 analyses were conducted in SAS v9.3 (SAS Institute Inc., Cary, NC). Before testing Aim 2 hypotheses we performed various descriptive analyses on the final GEMS and GRC/S scale resulting from the factor analyses. We found that the both were normally distributed. We also assessed the correlation between GEMS and the GRC/S scale. We found that they were moderately correlated ($r=0.48$, $p<0.001$), suggesting that they are measuring related but distinct constructs and multi-collinearity should not be a problem in regression analyses. GEMS also had low to moderate correlations with each GRC/S sub-dimension ($r=0.15-0.43$; all $p<0.001$).

We used PROC SURVEYLOGISTIC to accommodate the complex survey data. We used a cluster statement to appropriately adjust for the cluster sampling design by village and used scaled sampling weights, as described earlier in this chapter. To obtain appropriate variance estimates, we also included women ($n=600$) in the data set and used a “domain” statement for gender. We first used bivariate analysis to examine unadjusted associations between each independent/control variable and each outcome behavior. Because of the relatively low number of variables, we chose to retain all variables in the multivariate models regardless of the significance of unadjusted associations.

We used multivariate logistic regression to test Aim 2 hypotheses. As noted previously, we used standardized scores for GEMS, the GRC/S scale, and its sub-dimensions (with a mean of zero and SD of 1). All analyses controlled for age, education, employment, and marital status.

The multivariate equations were constructed as follows, with all variables entered simultaneously:

$$\text{Logit}(p_{\text{Concurrency}}) = \alpha + \text{GEMS}(\beta_1) + \text{GRC/S}(\beta_2) + \text{Age}(\beta_3) + \text{Education}(\beta_4) + \text{Employment}(\beta_5) + \text{MaritalStatus}(\beta_6)$$

$$\text{Logit}(p_{\text{IPVperpetration}}) = \alpha + \text{GEMS}(\beta_1) + \text{GRC/S}(\beta_2) + \text{Age}(\beta_3) + \text{Education}(\beta_4) + \text{Employment}(\beta_5) + \text{MaritalStatus}(\beta_6)$$

$$\text{Logit}(p_{\text{AlcoholAbuse}}) = \alpha + \text{GEMS}(\beta_1) + \text{GRC/S}(\beta_2) + \text{Age}(\beta_3) + \text{Education}(\beta_4) + \text{Employment}(\beta_5) + \text{MaritalStatus}(\beta_6)$$

e^{β_1} and e^{β_2} were the odds of each risk behavior given a 1SD increase in GEMS or the GRC/S scale, respectively, controlling for other variables. A confidence interval around the AOR indicated significance if it did not overlap 1. We also generated associated p-values. In additional analyses, we replaced the GRC/S composite with the set of sub-dimensions found in factor analyses.

Qualitative Methods for Aim 3

Aim 3 involved primary qualitative data collection and analysis of semi-structured individual interviews with 18 men in the same study area as the quantitative study. Research under Aim 3, like in Aims 1 and 2, was guided by the theoretical perspectives discussed in Chapter 2, primarily the Theory of Gender and Power and the Gender Role Strain Paradigm.

Sampling and Recruitment

Community gatekeepers were asked to identify potential participants in the 11 control villages in the parent study (i.e., villages not receiving the Community Mobilization intervention). Eligibility was limited to men from control villages because the intervention, which was designed to change gender norms and behavior, was underway in intervention villages when this qualitative research was done, potentially influencing participants' responses. Gatekeepers were staff from the Learning, Information Dissemination and Networking with the Community (LINC) Office as well as LINC Office liaisons in the 11 villages. These gatekeepers were informed of the focus of the study and were each asked to recommend 4 to 5 men ages 18–35 living in their village who they believed would be open and engaged participants in interviews. To help ensure that we captured a diversity of men's experiences, gatekeepers were also asked to include men with a range of employment backgrounds (from chronically unemployed to well employed) and family situations (from being single to being married/cohabiting and having children). Gatekeepers provided us with a list of

candidate participants that included the above information, and we ensured that we were filling each strata as we proceeded with data collection.

Specific eligibility criteria included:

- Men ages 18–35 years
- Currently live in a control village in the study area
- Identified by community gatekeeper
- Able and willing to provide informed consent
- Willing to be audio-recorded
- Not currently a community mobilizer with the parent study intervention or a field worker with the AHDSS

Data Collection Procedures

Two trained female qualitative interviewers who live in the study area and work with the parent study conducted the interviews. Female interviewers were used primarily because there were many more trained qualitative researchers with the AHDSS who were female than male, and no male interviewers were available the time of data collection. In addition, we believed male participants might be more willing to open up about experiences of being a ‘man’ with someone of the opposite sex, and female interviewers might themselves be able to remain more neutral about issues of masculinity (134). However, there are also potential drawbacks to using female interviewers in this case, particularly the possibility that men will offer perspectives that they believe women would be more likely to endorse (134).

A three-day training was conducted with the interviewers before interviewing began. This training covered the study’s theoretical basis and research questions, protocol for obtaining informed consent, and conducting the interview, the interview approach, and interview guide. Each interviewer conducted, transcribed, and translated one pilot interview. These two transcripts provided an opportunity to refine the interviewers’ probing techniques and revise the interview guide through

consultation. These two pilot interviews were judged to be of sufficient quality; therefore they were included in the final total of 18 interviews. Finally, once interviewing began, we reviewed the content of each interview with the interviewers as soon as it was translated to provide continuing feedback.

Before beginning the first interview with each participant, the interviewer sought informed consent and asked the participant whether he agreed to have the interview be audio-recorded. These criteria had to be met for the interview to be conducted. Interviews lasted 45–75 minutes and were held in a private, closed room in the participant's home or another location of his choosing.

The interview guide, included in Appendix C, helped structure the discussion. Interviewers also added spontaneous probes. After asking about demographic information, the interviewer began with an introductory question about what a typical day is like for the participant. Next, the interviewer asked the participant his views about what it means to be a man and what it means to be a woman. Interviewers then asked the participant to identify the three most important roles to him in his life. For each of these three roles, in turn, they asked what the role means to the participant, how he learned about it, the extent to which he feels he is filling the role, and what challenges he has faced in trying to do so. When finished discussing all three roles, the interviewer concluded by asking the participant about his hopes for the future for men in his community.

All interviews were conducted in the local language of Shangaan, following the participants' preference, and were audio-recorded with a digital recorder. The interviewers transcribed each interview verbatim and translated it into English. We then reviewed translations for clarity in English and revised them as needed in consultation with the interviewers.

Interviewing 18 men in total was sufficient to reach saturation, the point at which new ideas related to the study aims cease to emerge from the data and the researcher can identify patterns of recurring themes across participants (135). For example, we were able to identify patterns of beliefs about appropriate roles for men and women as well as common sources of strain in men's lives.

Data Analysis

We used an iterative process including both narrative and coding procedures to analyze the data. After reading through all interviews a number of times and making notes, we wrote 1–2 page narrative summaries for each to capture the ‘story’ each participant told (136). We also coded all interviews in Atlas.ti software (Scientific Software Development, Berlin, Germany) using both topical and emergent codes. We created a preliminary code list based on the topics covered in the interview guide and added additional codes based on emerging themes. We then generated reports with all quotes for each code and reviewed and compared across these reports to identify key themes. Finally, we began identifying ways in which themes fit together as a whole. This process of synthesizing findings was informed by the main assertions of the Gender Role Strain Paradigm, because part of the study’s purpose was to assess its salience to the South African context. We also paid particular attention in our analysis to the three HIV risk behaviors examined in the quantitative study.

Ethical Approval for Research Under Aims 1–3

The parent study was reviewed and approved by the Institutional Review Board (IRB) at UNC-CH and UCSF, as well as the University of the Witwatersrand in South Africa. The quantitative secondary data analysis conducted under Aims 1 and 2 was covered by the parent study approval; my name was added to the list of investigators who could use the data. The qualitative research under Aim 3 was reviewed and approved by the IRB at UNC and the Human Research Ethics Committee at the University of the Witwatersrand.

CHAPTER 4: MEASURING MEN’S INEQUITABLE GENDER NORMS AND MASCULINE GENDER-ROLE STRAIN IN A HIGH HIV–PREVALENCE SOUTH AFRICAN SETTING (AIM 1 FINDINGS)

Introduction

There has been a global call for research describing beliefs, cultural norms, and experiences related to gender roles to inform interventions to prevent HIV, gender-based violence, and other adverse health outcomes (6, 15). In particular, research and programming focusing on the connections between men’s beliefs and experiences related to gender roles, their struggle to maintain power over women, and their sexual risk and violence perpetration behavior is gaining momentum (6, 15, 78). Such efforts are particularly important in communities with high HIV prevalence such as in Mpumalanga province in South Africa, where over one-fifth of adults are living with HIV and most risk behavior is enacted within intimate relationships between men and women (1, 137).

One challenge to such research and programming is operationalizing and quantitatively measuring psychosocial constructs related to gender roles. Such measures should be carefully derived from theory, build on past evidence-based measures, and accommodate cross-cultural variation (132). In this study, we focus on two related psychosocial constructs: gender norms and masculine gender-role strain (MGRS). Gender norms are beliefs about appropriate roles and behavior for men versus women and are commonly conceptualized as ranging from equitable to inequitable (6). The Gender Equitable Men’s Scale (GEMS) is commonly used to measure gender norms in research and program evaluations worldwide (8, 15, 138). Pulerwitz and Barker (2008), working with young men in Brazil, developed GEMS as an alternative to available scales developed in the United States related to masculine ideology (8). GEMS included normative statements for both men and women that reflected developing-country realities and was developed to represent norms related to health outcomes of programmatic interest, primarily sexual, reproductive, and violence behaviors (8). Research

worldwide has found that GEMS is strongly associated with such behaviors among both men and women (6, 15, 34, 138). Studies in South Africa using GEMS and related measures suggest that inequitable gender norms encourage men to have multiple sexual partners, produce power imbalances within intimate relationships that can limit women's ability to negotiate or refuse sex, and contribute to gender-based violence (5, 12, 14, 64). In response, interventions to reduce these risk behaviors aim to transform gender norms at the individual and collective levels, often particularly with men and boys (6, 139).

MGRS is a promising theoretical complement to gender norms and is defined as the psychological strain men experience from trying to meet or failing to meet expected roles for them as men (19). Whereas gender norms can be seen as a cognitive appraisal of expected gender roles, MGRS can be seen as the experience of and emotional response to expected roles (19). The MGRS construct is based on Pleck's Gender Role Strain Paradigm, which suggests that men's experience of trying and failing to live up to masculine norms leads to anxiety and depression and causes many men to try to overcompensate in ways that are harmful to themselves and others (19, 21). These ideas have been supported in over 200 studies, primarily among U.S. college-based populations using the Gender Role Conflict Scale and Masculine Gender-Role Stress Scale, suggesting that MGRS is related to men's anxiety, depression, intimate partner violence (IPV) perpetration, and substance use (22-24). Qualitative and ethnographic studies in South Africa have also documented men's limited ability to 'prove themselves' as men by providing for their families, leading to what, in the face of changing national norms and policies around gender equality, many call a "crisis of identity" (28, 29, 32, 74, 140). Whereas a large body of research has examined gender norms and interventions to modify them in sub-Saharan Africa (6, 34), to our knowledge MGRS has not been examined or addressed in this region and remains largely unexplored to date in global HIV prevention research. As a result, we developed the Gender Role Conflict/Stress (GRC/S) scale for the South African context by combining elements of two validated scales that have been commonly used in Western settings, the Gender Role Conflict Scale and Masculine Gender Role Stress Scale (22, 36).

We sought to evaluate the validity and reliability of the GEMS and GRC/S scales in the South African context. This was accomplished in four steps. First, using exploratory factor analysis, we evaluated the factor structure of the GEMS and GRC/S scales. Second, we tested the structural validity of both measures using confirmatory factor analysis. Third, we examined the reliability of the factors. Fourth, we assessed convergent validity. These scales will be applied in subsequent research to understand men's HIV risk behaviors and to evaluate a community mobilization intervention to change gender norms and reduce HIV vulnerability in this setting (114).

Methods

Sample and Study Setting

Data come from the baseline survey of the study *Community Mobilization for the Prevention of HIV in Young South African Women*, a two-year cluster randomized controlled trial of an intervention to change inequitable gender norms, particularly among men. A population-based survey was conducted from March to June 2012 among men and women ages 18–35 in 22 villages in the Agincourt area of the rural Bushbuckridge sub-district in Mpumalanga Province, located near South Africa's Eastern border with Mozambique. Like many rural areas of South Africa, Agincourt is densely populated but relatively isolated from urban centers and characterized by few employment opportunities and high levels of out-migration for labor. The area is home to the Agincourt Health and Demographic Surveillance System (AHDSS), which runs an annual census (115).

Recruitment and Data Collection

Individuals were identified and selected through the AHDSS database, from among all male and female residents aged 18–35 living in the 22 study villages enumerated in the 2011 census. For sample selection each household with 18- to 35-year-old residents was designated as either male or female, and individuals of that gender in the household were randomly assigned an order. On entering a home, the individual randomly prelisted was screened for the following more detailed eligibility criteria: person lives in the home, is 18–35 per confirmed date of birth, is the gender assigned to the

home, and has lived in the study area for the past 12 months. If the prelisted individual did not meet these eligibility criteria, the second was screened, and so on. Only one individual was interviewed per household.

After eligibility was confirmed and informed consent obtained, surveys were conducted in the participant's household and took 1 to 2 hours to complete. Interviews were conducted in the local language of Shangaan or in English, depending on the participant's preference, using computer-assisted personal interviewing (CAPI), in which the interviewer reads each question to the respondent, then enters the answer into an electronic form on a laptop computer. Questions covered socio-demographic background, gender role attitudes and experiences, sexual risk behaviors, and a range of other questions related to other personal beliefs, practices, and perceptions of the social context. The survey, including GEMS and GRC/S scale items, were translated from English into Shangaan, back-translated, and revised as necessary.

Only men were included in the present analysis. Among 620 eligible men, 581 men were enrolled into the study (94%); 35 refused to participate (6%) and the remaining 2 (<1%) did not enroll for other reasons. The final sample was weighted using scaled weights to account for differential sampling probabilities at the household and individual level and to represent the distribution of men aged 18–35 years in Agincourt based on the 2011 AHDSS. The study was approved by the Institutional Review Board at the University of North Carolina-Chapel Hill and the Human Research Ethics Committee at the University of the Witwatersrand, South Africa.

Scale Adaptation Process

Gender norms were measured using the GEM scale (8), which includes a series of third-person belief statements. We based our scale on an Ethiopian adaptation of GEMS that achieved high internal consistency and included 24 items representing inequitable gender norms, 18 of which came from the original GEMS (117). We changed the wording of a few items in consultation with the local research team to increase appropriateness for the local social context. We piloted this scale with 50 men to ensure adequate reliability. Before final survey implementation we added six “reverse-coded”

items from the original GEMS in an effort to include gender-equitable alongside gender-inequitable norms, for a total of 30 items. The content of items addressed both men's and women's roles and behavior related to four domains: sexual relationships, violence, reproductive health and disease prevention, and domestic chores and daily life, in line with the original theoretical work (8). Response categories included "Do not agree at all," "Somewhat agree," and "Agree a lot," consistent with the three response categories commonly used for GEMS in other studies (8, 15, 116). We coded all items such that a higher score represented more inequitable norms.

MGRS was measured using a multi-dimensional scale that we developed for the South African context for this study by combining sub-dimensions and items from two scales: the Gender Role Conflict Scale (22, 98) and the Masculine Gender Role Stress scale (36). Consequently, we called the combined scale the Gender Role Conflict/Stress (GRC/S) scale. We decided to combine the two scales instead of using either one in its entirety because we found the resulting set of sub-dimensions and items most applicable to the South African setting and most relevant to the HIV-related outcomes of interest in this study. Popular reviews of gender measures clearly distinguish these two particular scales from measures of adherence to gender norms because both examine the degree to which adherence to and internalization of traditional gender roles causes stress in an individual's life (20, 97). Both O'Neil (1986; 2008) and Eisler (1987) position their scales as relating to the MGRS construct, although neither claims to measure MGRS directly (22, 36, 98). O'Neil (2008), for example, has suggested that the Gender Role Conflict Scale is most closely related to dysfunction strain rather than the other sub-types (22). Nonetheless, at present these two scales are the closest the field has come to measuring MGRS, and we believe both originate from the same theoretical notion as the Gender-Role Strain Paradigm and also tap into the overall experience of MGRS to some extent.

The Gender Role Conflict Scale, developed by O'Neil (1986), is a multi-dimensional scale that has been shown through numerous studies to have good psychometric properties (validity and reliability) in various Western populations (22, 98). It includes a series of first-person statements

about the importance of or stress around fulfilling traditional masculine roles, and items are worded to tap into psychological strain (e.g., “I worry about”, “...is a measure of my personal worth”). For the adapted scale, we retained two of the four original Gender Role Conflict Scale domains (*Success, power, competition* and *Restrictive emotionality*), and based on input from local study team members, discarded two domains deemed less relevant to the local context (*Restrictive affectionate behavior between men* and *Conflicts between work and family relations*). *Restrictive affectionate behavior between men* was specifically eliminated due to recent studies that suggest that items that include references to homosexuality may tap into a different latent construct than those measuring masculine ideology (116, 141).

We included two domains in the adapted scale from a related measure, the Masculine Gender Role Stress Scale (*Subordination to women* and *Physical inadequacy*) (36). Another sub-dimension, *Performance Failure (Work and Sex)*, provided additional content for a number of items in our *Success, power, and competition* sub-dimension. Like the Gender Role Conflict Scale, the Masculine Gender Role Stress Scale taps into men’s strain, but does so by asking men the extent to which masculine-gender-relevant situations (e.g. “being outperformed at work by a woman”) would be stressful to them (118). Although this scale has been used in fewer studies than the Gender Role Conflict Scale, it has demonstrated good psychometric properties (120, 121).

We reviewed a draft of the resulting GRC/S scale with members of the local study team with years of experience in working with men, who confirmed that overall the scale had salient content (i.e., face) validity and that the domains were appropriate. The team recommended dropping seven items, adding one item, and editing the wording of nine other items. This process resulted in a final 28-item scale. Response categories included “Do not agree at all,” “Somewhat agree,” and “Agree a lot,” unlike the original Gender Role Conflict Scale, which includes 5 or 6 response categories ranging from “strongly disagree” to “strongly agree” (22). The study team chose three categories based on experience at the site that respondents prefer fewer response categories and because they

also make the most sense in the local language. All questions were worded and coded such that higher scores represent more strain.

Analysis

We carried out a split-sample exploratory and confirmatory factor analysis (EFA/CFA) using Classical Test Theory (132). We randomly split the sample of men in half, conducted EFA on the first half to better understand dimensionality and identify the most plausible factor structure and CFA on the second half to test the structural validity of the structure selected based on the EFA (131, 142). All factor analyses were performed using Mplus software version 7.11 (128). We used the MLR estimator in Mplus, which uses maximum likelihood with a robust standard error that accounts for the cluster sampling design by village. Two participants had all GRC/S scale items missing and were dropped from that analyses. Other missing data was minimal (<1% per item) and was handled using full information maximum likelihood in Mplus.

Factor structure. To determine the factor structure through the EFA, we followed the approach and criteria recommended by DeVellis (132), adding other techniques to provide additional insight when needed. Two techniques were used to determine the number of factors for extraction. First, we used a scree plot such that the primary bend in the plot indicated the number of factors to extract. Second, we used Kabacoff's (2003) parallel analysis procedure, which minimizes bias due to random variance in the data by running simulations on multiple randomly sampled datasets to determine the maximum number of factors to retain (132, 143). Based on the scree plot and parallel analyses we specified a plausible range of number of factors and, due to expected high correlations between the factors, used oblique (geomin) rotation methods to produce interpretable factor loadings. To determine the factor structure to be retained for testing using CFA we used the following criteria: (1) interpretability (i.e., the extent to which items within each factor seemed to be tapping into a common theme), (2) significance (i.e., factor loadings that were significant at $p < 0.05$ across most factor solutions were retained), and (3) adequacy of reliability of each factor (in the same manner as described below). Finally, we assigned a name to each factor based on its item composition.

Structural validity. We assessed whether the factor structure of the latent variable is valid and measures what the latent variable is intended to measure by applying the factor structure suggested by the EFA to the CFA following procedures recommended by Bollen (142). We began by inspecting loadings of each item on its factor and retained items that had significant loadings ($p < 0.05$). We then assessed the adequacy of model fit based on commonly recommended cut-off criteria. Because the chi square statistic tends to suggest poor model fit when the sample size is relatively large (144), we used the indicator of good fit suggested by Segars and Grover of chi square being within three times the degrees of freedom (145). We also assessed the Root Mean Square Error of Approximation (RMSEA, with a cut-off value < 0.06 indicating good fit), the Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI) (both with cut-offs > 0.95), and the Standardized Root Mean Squared Residual (SRMR, cut-off < 0.08) (146). We then reviewed modification indices, added plausible correlated errors (e.g., two items had similar wording), and re-fit the model. In addition, we looked at the degree of correlation between factors and assessed whether a higher-order factor was present, following Brown's (2012) recommended procedures (147). We assessed the adequacy of final model fit based on the same cutoff criteria described above.

Reliability. To assess reliability, we calculated Cronbach's coefficient alpha, a widely used measure of internal consistency reliability. We also calculated Raykov's ρ (rho), a measure of reliability similar to alpha but more suitable for categorical response categories, less influenced by number of scale items, and accounting for dimensionality in reliability estimates for multidimensional scales (148). We deemed an alpha and rho above 0.7 to indicate adequate reliability (132).

Convergent validity. Finally, we assessed whether GEMS and GRC/S were correlated with other theoretically related variables. We first assessed the extent to which GEMS and GRC/S (including sub-dimensions) were correlated with each other, expecting a moderate degree of correlation. We also assessed whether each was correlated with three other items included in the survey that assessed men's broader support for gender equality.

Results

Among the 581 men in the final sample, the mean age was 22.4 (range 18–35) (Table 4.1). Most participants (85%) had never been married. Sixty percent had some high school education, 26% had completed high school, and 2% had attended University or Technikon. Thirty-one percent of men had earned any income in the past 3 months.

GEMS

For the EFA for GEMS (n=291), evaluation of the scree plot suggested 1 factor, however the parallel analysis suggested 4 factors. From an initial inspection of factor loadings it became apparent that the 6 items worded to represent “equitable” gender norms all had negative loadings after undergoing reverse-coding, compared to positive values for other items in the unidimensional and most other factor solutions, suggesting they should be dropped (132). In addition, one item (“It disgusts me when I see a man acting like a woman”) had non-significant loadings across multiple factor solutions, suggesting it is not measuring the same construct as the other items. Therefore, we dropped these 7 items from the scale and re-ran the EFA. After assessing interpretability among the various factor structures, we decided that a four-factor solution resulted in the most interpretable item groupings. These fell along the lines of content areas often used to group GEMS scale items in surveys and publications: *Sexual relationships*, *Violence*, *Reproductive health and disease prevention*, and *Domestic chores and daily life*. However, we found reliability of the factors to be unacceptably low for all factors except *Domestic chores and daily life*, ranging from 0.43–0.54 for alpha and 0.41–0.55 for rho (0.78/0.66 for *Domestic chores and daily life*). Because of these low reliabilities we chose to test a unidimensional model in the CFA.

Table 4.1. Weighted Sample Characteristics (n = 581)

	Mean (range) or %
Age (mean)	22.4 (18-35)
Marital status	
Never married	85.2%
Divorced/separated/widowed	5.3%
Married (legal or traditional)	9.5%
Highest education level completed	
No school/some primary	3.1%
Completed primary	8.4%
Some high school	60.2%
Completed high school	26.4%
University/technikon	2.0%
Earned any income in the past 3 months	31.3%

In the CFA for GEMS (n=290) we retained all but the 7 items noted previously when testing the unidimensional model. GEMS CFA results are presented in Table 4.2. Many factor loadings were low (0.2–0.4), especially for items related to violence and sexual relationships; 6 additional items failed to load significantly on the latent factor and were therefore dropped. All factor loadings for final items were significant at $p < 0.05$. After reviewing modification indices for the uncorrelated model, we added nine plausible correlated errors. Model fit statistics for the uncorrelated and correlated (final) models are presented in Table 4.4. Overall, the final correlated 17-item model had adequate fit based on most cutoff criteria. Although as anticipated the chi-square value was highly significant, its value was within three times the degrees of freedom. In addition, it would be preferable for CFI and TLI values to be above 0.95 rather than 0.90. SRMR values indicted good fit. Reliability of the final scale was good, at 0.79 for alpha and 0.71 for rho.

Table 4.2. Confirmatory Factor Analysis Results for the Final GEM scale (n=290)

ITEM	Factor loading
A woman should tolerate violence to keep her family together.	.33
If someone insults a man he should defend his reputation with force if he has to.	.19
A man using violence against his wife is a private matter that shouldn't be discussed outside the couple.	.26
It is the man who decides what type of sex to have.	.39
Men are always ready to have sex.	.27
Men need sex more than women do.	.25
You don't talk about sex, you just do it.	.27
A woman who has sex before she marries does not deserve respect.	.25
Women who carry condoms on them are easy.	.45
It is a woman's responsibility to avoid getting pregnant.	.32
Only when a woman has a child is she a real woman.	.56
A real man produces a male child.	.57
Changing diapers, giving a bath, and feeding kids are the mother's responsibility.	.59
A woman's role is taking care of her home and family.	.69
The husband should decide to buy the major household items.	.72
A man should have the final word about decisions in his home.	.70
A woman should obey her husband in all things.	.54
<i>Dropped items*</i>	
There are times when a woman deserves to be beaten.	
It is alright for a man to beat his wife if she is unfaithful.	
A man can hit his wife if she won't have sex with him.	
A man needs other women even if things with his wife/partner are fine.	
It disgusts me when I see a man acting like a woman.	
A woman should not initiate sex.	
A man should be outraged if his wife/partner asks him to use a condom.	

* Dropped items shown here represent inequitable norms only (6 items representing equitable norms were also dropped).

All analyses incorporated sampling weights and accounted for the cluster sampling design.

GRC/S Scale

The EFA for the GRC/S scale (n=289) suggested four factors, similar to those originally hypothesized. Evaluation of the scree plot was ambiguous because there was not a clear bend in the plot. However, the parallel analysis suggested four factors. From an initial inspection of factor loadings, we identified one item ("Making money is part of my idea of being a successful man") that was not performing well, likely because 91% of men had "agreed a lot" with the statement, limiting variation. In addition, similar to GEMS, one item related to homosexuality consistently loaded poorly ("Affection with other men makes men tense"). Therefore, we dropped these 2 items from the scale and re-ran the EFA. After assessing interpretability among the various factor structures, we decided that a four-factor solution had the most interpretable item groupings. The factors were labeled as:

Success, power, competition; Subordination to women; Restrictive emotionality; and Sexual prowess.

These groupings were similar to the groupings we had expected based on previous analyses of the two scales used to create this measure, with two exceptions: the “physical inadequacy” items—instead of forming a separate factor, loaded on *Success, power, competition*—and items related to sexual performance/prowess, which we believed would tap into *Success, power, competition*, instead formed a separate factor in themselves. Reliabilities assessed at this stage were near or above 0.7 for each factor, therefore we proceeded to test these factors in the CFA.

In the CFA for the GRC/S scale (n=290) we tested the four-factor model found in the EFA, retaining all but the 2 items noted previously. These CFA results are presented in Table 4.3. Two items were dropped because they had non-significant factor loadings. All factor loadings for final items were significant at $p < 0.05$. After reviewing modification indices for the uncorrelated model, we added 12 correlated errors. The correlated model had adequate fit based on most cut-off criteria (Table 4.4), with the same findings in relation to cut-off criteria as described for GEMS above.

The four GRC/S scale factors were moderately to highly correlated (from 0.38 to 0.71), indicating that they are sufficiently distinct from each other but that these factors may be part of a higher-order, multi-dimensional construct (147). Factor loadings of the four first-order factors on the second-order factor ranged from 0.56 to 0.87 (Table 4.3). Incorporating this higher-order latent variable met criteria for plausibility in that it is theoretically justifiable, the factors are correlated, and the higher-order factor model had adequate fit, as shown in Table 4.4 (142, 147, 149). Path diagrams for the final GEMS and GRC/S scale models are included in Appendix B.

Table 4.3. Confirmatory Factor Analysis Results for the Final GRC/S Scale (n=290)

FACTOR AND ITEM	Factor loading*
Success, power, competition	.73
I worry about failing and how it affects my doing well as a man.	.32
I am often concerned about how others evaluate my ability to provide for my family.	.27
I strive to be more successful than others.	.55
I sometimes define my personal value by my ability to make money or find work.	.54
Feeling that I am in good physical condition is important to me as man.	.57
Being physically stronger than other men is important to me.	.68
I always strive to win in sports competitions.	.72
Having a girlfriend or wife is part of my idea of being a successful man.	.47
Subordination to women	.87
Making more money than a woman is a measure of my value and personal worth.	.38
Being outperformed at work by a woman would make me uncomfortable.	.57
I would be concerned if my friends knew I live with a woman and did any housework.	.50
I do not like to let a woman take control of the situation.	.43
I would be concerned if my friends knew I stayed at home to take care of children while my wife goes to work.	.51
Having a female boss would be difficult for me.	.53
Restrictive emotionality	.61
I have difficulty telling others I care about them.	.63
Talking about my feelings during or after sex is difficult for me.	.58
I often have trouble finding words to describe how I am feeling.	.62
I do not like to show my emotions to other people.	.67
Having someone see me cry would be difficult for me.	.52
Sexual prowess	.56
Being able to perform sexually is important to me as a man.	.78
I feel that I always need to be ready for sex with my partner, even if I am tired.	.44
I worry about being unable to become sexually aroused when I want.	.60
It is important to me to know I can drink as much or more than others.	.44
Having sex is part of being a successful man.	.49
Dropped items	
Making money is part of my idea of being a successful man.	
I often feel like I need to be in charge of those around me.	
I like to feel superior to other people.	
Affection with other men makes me tense.	

*Loadings for the factors (in bold) are loadings of those factors on the higher-order construct. All analyses incorporated sampling weights and accounted for the cluster sampling design.

Reliability of the final multidimensional GRC/S scale was 0.83 for alpha and 0.83 for rho. For each factor, reliabilities were as follows (alpha/rho): 0.80/0.73 for *Success, power, competition*; 0.65/0.69 for *Subordination to women*; 0.65/0.72 for *Restrictive emotionality*; and 0.68/0.73 for *Sexual prowess*.

Table 4.4. Model Fit Statistics for Base and Correlated GEMS and GRC/S Scale Models in CFAs (n=290)

	χ^2	df	p	$\chi^2\Delta^a$	RMSEA	RMSEA 90% CI	CFI	TLI	SRMR
<i>Value indicating good model fit:</i>			<i>>0.05</i>		<i><0.05</i>		<i>>0.95</i>	<i>>0.95</i>	<i><0.08</i>
GEMS base model (17 items)	226.04	119	0.0000	--	0.056	[0.044, 0.067]	0.81	0.79	0.065
GEMS final correlated model (17 items)	154.94	110	0.0032	-71.1*	0.038	[0.022, 0.051]	0.92	0.90	0.053
GRC/S scale base model (4 factors, 24 items)	492.55	246	0.0000	--	0.059	[0.051, 0.066]	0.76	0.73	0.081
GRC/S scale final correlated model (4 factors, 24 items)	330.21	234	0.0000	-162.3*	0.038	[0.028, 0.047]	0.91	0.89	0.070
GRC/S scale correlated model with higher-order factor	337.66	236	0.0000	+7.5	0.039	[0.029, 0.047]	0.90	0.88	0.070

CFI=Comparative Fit Index; CI=Confidence interval; RMSEA=Root Mean Square Error of Approximation;

TLI=Tucker–Lewis Index; SRMR= Standardized Root Mean Squared Residual.

^a $\chi^2\Delta$ is the chi-square difference statistic for comparing the current model to the previous model in the table.

* p < .01

Finally, we assessed convergent validity of the GEMS and GRC/S scales with variables they should theoretically be related to. First, we found that GEMS and the GRC/S scale are themselves moderately correlated at 0.48 ($p < 0.0001$). GEMS is also correlated with each GRC/S scale sub-dimension ($r = 0.15$ – 0.43 ; all $p < 0.001$). GEMS and the GRC/S scale are also correlated with three items included in our survey that assessed broader beliefs about gender equality, at $r = 0.14$ – 0.40 (all $p < 0.001$): “Rights for women mean that men lose out,” “Gender equality, meaning that men and women are equal, has come far enough already,” and “It is a good thing that women have more rights than ever before.”

Discussion

We sought to establish valid and reliable measures of gender norms and masculine gender role strain (MGRS) in the rural South African context, where cultural adherence to gender norms and the experience of strain associated with these norms play a role in the HIV and violence epidemics.

Though GEMS is commonly used in program evaluation, it has rarely been subject to a rigorous factor analysis. This is the first critical look at the scale's performance in South Africa and, to our knowledge, is its first application in Mpumalanga province and among the Shangaan ethnic group that predominates in that province. We developed the GRC/S scale for the South African context by combining two scales validated in Western contexts. This is the first attempt to explore the psychometric properties of a scale to measure MGRS in Africa, filling a gap in gender-based research in African populations, specifically in sub-Saharan Africa, with a widespread, generalized HIV epidemic.

GEMS Factor Analysis Findings

The unidimensional GEMS had adequate fit, although only three of five fit indicators met cut-off criteria. The scale also demonstrated good reliability. The two published factor analyses of GEMS, of which we included many of the same or similar items, also suggested a unidimensional scale for items related to inequitable gender norms, although dimensionality was not explored in detail (8, 116). GEMS items cover a wide range of domains, from violence to sex to appropriate household roles; therefore it was not surprising to us that the EFA suggested multiple factors. However, the four groupings can also be conceptualized as content areas in which gender norms manifest rather than having clear theoretical distinctions, which may explain why factor reliabilities were unacceptably low.

GEMS factor loadings were quite low for items related to violence, and many of these items were eventually dropped. It is possible that condoning violence against women may not stem from the same psychological orientation as endorsing gendered roles in sexual relationships, household decision-making, or division of labor. It could also be that items endorsing violence against women elicited more socially desirable responses than other GEMS items, perhaps due to predominantly female interview staff as well as recent national discourse and policy about this issue in South Africa, including support for gender equality under the Constitution (150). Although most of the violence-related items we dropped appear to have performed adequately in the other studies, we believe that

there is a need for further theoretical work to explore the relationships of the content areas to the larger construct of gender norms and exploring new scale items related to violence. Improved measurement of beliefs about violence against women in the South African context is particularly salient given the severity of gender-based violence (5, 58).

Factor loadings for items related to sexual relationships also tended to be low (0.2–0.5), which could suggest a need for new or improved items. In particular, given the centrality of GEMS to research on HIV/sexually transmitted infections (STI) transmission, there may be a need for more items related to men having multiple and concurrent partnerships and to women's ability to refuse sex.

GRC/S Scale Factor Analysis Findings

To our knowledge this is the first time that the MGRS construct (or any related construct) has been measured in an African country. In the factor analysis for the GRC/S scale, we found that a multidimensional four-factor model had good structural validity and adequate fit, although only three of five fit indicators met cut-off criteria. The multidimensional construct, as well as each factor, had good reliability. In addition, factor loadings were adequate, with most falling between 0.4 and 0.7. Being the first use of the scale, some adjustments should be made for future uses. A few of the *success, power, competition* items did not vary sufficiently and can be revised to elicit more varied responses to discern finer points of divergence along the scale. In particular, revising the dropped item "Making money is part of my idea of being a successful man" to read "A man is only successful if he makes money" could elicit more varied responses and help separate men with extreme strain from those with less. Fine-tuning the scale should further improve validity and reliability.

It is interesting to note that sexual prowess emerged as a separate factor among this sample of South African men, a departure from U.S. scales for which sexual performance is integrated into overall conceptualizations of success. Perhaps in response to limited work opportunities, South African men have defined sexual prowess as a separate realm in which to seek achievement as men. Luyt (2005) similarly found that "sexuality" emerged as a separate factor when assessing the factor

structure of the MANI II scale measuring masculine ideology in South Africa (141). Unfortunately, there were no items in our scale related to stress around having and showing off multiple sexual partners as an indicator of sexual prowess; we recommend that future versions of this scale explore such items.

Because we did not engage in formative research or cognitive interviewing before survey implementation, the new GRC/S scale may not cover the full range of men's experiences related to gender-role strain. We believe that additional work to describe the construct in the African context is critical. This should include qualitative research and an exploration of the various dimensions in related U.S. research that were not explored in our data. Two original Gender Role Conflict Scale dimensions were not explored in our data. Specifically, the dimension *conflicts between work and family relations* may manifest differently in South Africa, where high unemployment and low marriage/cohabiting rates are more common than the United States. However, this tension between work and family still merits exploration in Mpumalanga.

Additional research is needed to evaluate how well the GRC/S scale performs in other settings, including confirmation of the factor structure and scale reliability. We are currently assessing the scale's ability to predict outcomes of interest including men's HIV risk behaviors.

Both GEMS and the GRC/S scale demonstrated convergent validity. GEMS and the GRC/S scale were moderately correlated with each other, as was expected given that perceived masculine norms are integral to both scales. However, the fact that they were not more highly correlated also suggests that they are measuring distinct constructs. GEMS and the GRC/S scale were also correlated with three other survey items assessing broader beliefs about gender equality, further demonstrating convergent validity.

These findings should be interpreted with several study limitations in mind. First, as mentioned previously, we did not conduct formative research to develop the GRC/S scale as is ideal when creating a scale or adapting it to a new context. Second, social desirability bias could be present; men could have responded to scale items in ways they thought were most socially acceptable

rather than representing their true opinions (151). Third, our sample only included non-migrating men in a rural location with high out-migration for work (about 30% of men in the study area move for work in any given year (115)). Further, most men were on the younger end of the 18–35 age range, which limits the generalizability of our findings.

Conclusions

Having valid and reliable measures of theoretical constructs related to gender roles is essential to research on men's sexual and violence behaviors and evaluation of programs seeking to modify behaviors that place men and their partners at risk. Our findings add to growing literature on the measurement of masculine gender norms. Complementing the GEMS scale's more cognitive appraisal of gender roles, the GRC/S scale is a promising multidimensional scale that captures men's experience of and emotional response to expected roles for them as men. We believe that future research using both of these scales will further illuminate the effectiveness of gender transformative interventions gaining favor in communities worldwide.

CHAPTER 5: IMPACT OF INEQUITABLE GENDER NORMS AND MASCULINE GENDER-ROLE STRAIN ON MEN’S HIV RISK BEHAVIORS IN MPUMALANGA, SOUTH AFRICA (AIM 2 FINDINGS)

Introduction

Gender norms—beliefs about appropriate roles and behavior for men and women—are recognized as a key driver of HIV vulnerability worldwide (78, 81). Inequitable gender norms legitimize men’s power over women and promote HIV risk behaviors as acceptable and expected masculine behavior (9, 10). For example, men who hold more inequitable norms are more likely to engage in multiple and concurrent sexual partnerships (7, 77, 82); perpetrate intimate partner violence (IPV), which can limit women’s ability to refuse sex or insist on safer sex (37, 57); and abuse alcohol, which disinhibits sexual and violence behaviors and increases attendance at venues where sexual partners meet (63, 65, 70, 152, 153). Studies in South Africa, home to the most severe HIV and gender-based violence epidemics in the world (1, 58, 154), have demonstrated associations between inequitable gender norms and such risk behaviors among men (4, 5, 12, 14, 18, 45).

Consequently, in South Africa and other countries worldwide, governments and international organizations are promoting a gender equality agenda in which men are engaged as partners (89, 155). In HIV and violence prevention programming, the World Health Organization (WHO) has championed a “gender transformative” approach that seeks to directly question gendered beliefs and behavior, particularly among men, that has now been used in over 60 interventions worldwide (6, 33, 34). South Africa, for instance, has large-scale and ongoing programs such as Stepping Stones, Men as Partners, and the One Man Can campaign (156-158). Although more rigorous evaluation of such programs is needed, there are promising results in changing gender attitudes, violence and sexual behaviors, and even biological outcomes related to HIV/sexually transmitted infections (STIs) (6, 34,

84, 87). Indeed, UNAIDS recently called for such initiatives, particularly programs focused on men and boys, to be brought to scale (6, 155).

These changes in government policies around gender relations and the introduction of gender-transformative programs are necessarily affecting men's position in society. Several recent studies have examined the impacts of these changes on men's beliefs and behavior. Qualitative and ethnographic studies consistently find that many men support gender equality in the abstract but are unwilling or unable to implement more gender-equitable practices in their own relationships, impeding prevention efforts (29, 32, 35, 140, 159). Further, studies locate the cause of such resistance in a "crisis of masculine identity," particularly due to men's chronic inability to provide for their families, the cornerstone masculine role in most societies (11, 32, 101, 159, 160). In fact, a key finding from the recent multi-country International Men and Gender Equality Survey (IMAGES) was that such work-related stress was highly common across countries and was a significant factor in men's depression, IPV perpetration, and alcohol abuse (15). According to Barker et al. (2011),

Engaging men in gender equality requires being empathetic with men's lived experiences—the unspoken depression, suicidal thoughts, high levels of childhood experiences of violence, and their high levels of work-related stress. But being empathetic toward the structural conditions of men's lives is not to make excuses for the violent and oppressive practices of some men. It is, instead, an affirmation of the need to move beyond a superficial understanding of gender equality toward addressing the structural—but changeable—factors that underpin it (15, p. 61).

Therefore, to make progress, evidence suggests the need to examine and intervene on issues of masculine identity that cause stress and affect men's ability to enact more gender-equitable practices (21, 33, 161). Masculine gender-role strain (MGRS) is a promising theoretical construct that has not been applied in the African context and has been largely unexplored in HIV prevention research globally (19, 20). The Gender Role Strain Paradigm, first introduced by Pleck in the 1980s, defines MGRS as the psychological strain men experience from trying or failing to live up to social or internalized expectations of themselves as men (19). When men cannot meet socially positive masculine expectations, like providing for their family, they may turn to alternate means of gaining self-esteem and social status as men, such as through sexual prowess, and seek to assert power and

control over women (19, 21). MGRS is among the most common constructs in masculinity studies in Western countries and has been shown to be related to men's anxiety, depression, IPV perpetration, and alcohol abuse (22-27).

MGRS can be characterized into three different sub-types, which together produce the experience of MGRS as a whole: discrepancy strain, trauma strain, and dysfunction strain (19). *Discrepancy strain* refers to men's inability to live up to internalized gender role ideals. *Trauma strain* refers to the stress experienced as a result of the gender socialization process itself. Finally, *dysfunction strain* is the negative effects of fulfilling more dysfunctional masculine roles (19). The MGRS construct, although not formally operationalized for research by Pleck or others, has been captured to some extent in related multidimensional scales that measure not strain sub-types but rather observable patterns of strain—aspects of traditional masculinities considered most likely to produce psychological strain in a given context (22, 36, 97). Using such a scale adapted to our study setting, the Gender Role Conflict/Stress scale, we previously found that the four relevant sub-dimensions included *Success, power, competition*; *Subordination to women*; *Restrictive emotionality*; and *Sexual prowess*.

In this analysis we examined the impact of inequitable gender norms and MGRS on three key HIV risk behaviors among men ages 18–35 in rural Mpumalanga, South Africa, home to a widespread HIV epidemic. We hypothesized that holding more inequitable gender norms and having higher gender-role strain would be significantly associated with an increased odds of reporting sexual partner concurrency, IPV perpetration, and alcohol abuse. In addition to the effect of MGRS as a composite, we also assessed which of its four sub-dimensions were associated with these outcomes. We conclude this chapter by reflecting on findings in light of theory and discussing implications for intervention.

Methods

Data Source and Study Setting

Data come from the baseline survey of the study *Community Mobilization for the Prevention of HIV in Young South African Women*, a two-year cluster randomized controlled trial of an intervention to change inequitable gender norms, particularly among men. The baseline survey was conducted from March to June 2012 among men (n=581) and women (n=600) ages 18–35 in 22 villages in the Agincourt area of the Bushbuckridge sub-district in rural Mpumalanga province, where 22% of adults are living with HIV (1, 137). Like many rural areas of South Africa, Agincourt is densely populated but relatively isolated and characterized by few employment opportunities and high levels of out-migration for labor. The area is dry, with limited subsistence farming and roads that are largely unpaved. The 22 villages in the study site belong to the Agincourt Health and Demographic Surveillance System (AHDSS), where an annual census has been taking place since 1992 (115).

Sample and Procedures

Individuals were identified through a census list of all men and women ages 18–35 living in the 22 study villages in Agincourt who had been enumerated by the 2011 AHDSS (115). For sample selection each household was designated as either male or female, and individuals of that gender in the household were randomly numbered in order (1, 2, 3, etc.). On entering a home the individual randomly prelisted first was screened for the following more detailed eligibility criteria: person lived in the home, was age 18–35 per confirmed date of birth, and had lived in the study area for the past 12 months. If the first individual did not meet these eligibility criteria, the second was screened, and so on.

After eligibility was confirmed and informed consent obtained, the surveys took place in the participant's household and generally lasted 1 to 2 hours. Surveys were conducted in the local language of Shangaan or in English, depending on the respondent's preference. Surveys were

administered using computer assisted personal interviewing (CAPI), in which the interviewer reads each question to the respondent, then enters the answer into an electronic form on a laptop computer. The survey was translated from English into Shangaan, back-translated, and revised as necessary. The Institutional Review Board at the University of North Carolina-Chapel Hill and the Human Research Ethics Committee at the University of the Witwatersrand in South Africa approved this study.

Only men were included in the present analysis. Among 620 eligible men, 581 men were enrolled into the study (94%); 35 refused to participate (6%) and the remaining 2 (<1%) did not enroll for other reasons.

Measures

HIV risk behaviors

Concurrency in the last 12 months was assessed among all participants. Individuals who had not yet had sex (13%) were coded as not practicing concurrency. Individuals reporting having ever had sex completed a partner grid in which they were asked the month and year of first and last sex with their last 3 partners. We categorized men who reported overlapping date ranges in the 12 months before the interview as having had concurrent partnerships as recommended by UNAIDS; this approach directly assesses temporal overlap in partnerships and may produce less social desirability bias than reporting only on current partnerships (124).

IPV perpetration in the last 12 months was also assessed for the whole sample. For individuals who had never had an intimate partner (17%), we counted this as not perpetrating IPV. Individuals who reported ever having had a partner responded to a WHO questionnaire adapted for South Africa (122). Participants were asked whether they had carried out any of seven kinds of physical or sexual IPV (e.g., pushing, grabbing or slapping your partner; using force, like hitting, holding your partner down, or using a weapon, to make your partner have sex), ever and in the past 12 months. We dichotomized the final variable due to the non-normal distribution of the continuous score. Men were defined as perpetrating IPV in the past 12 months if any of the seven types of IPV was reported in that time period.

Recent alcohol abuse, defined as a pattern of drinking that results in harm to one's health, interpersonal relationships, or ability to work (60), was measured among all participants using the Alcohol Use Disorders Identification Test (AUDIT) (123). This measure, which was developed by the WHO based on an extensive six-nation validation trial (125), includes 10 items about recent alcohol use, alcohol dependence symptoms, and alcohol-related problems, with a possible range of 0–40. We dichotomized the final variable, with a score of 8 or more considered alcohol abuse, following WHO AUDIT recommendations as well as other recent studies on alcohol abuse in South Africa (123, 162, 163).

Gender role measures

Gender norms (Table 5.1) was measured using an adapted version of the Gender Equitable Men's scale (GEMS). GEMS, originally developed in Brazil (8), has now been used in a number of studies of HIV risk and violence behaviors in sub-Saharan Africa (15, 116, 117). We adapted the scale for the present study from an Ethiopian version, which had achieved high internal consistency reliability (117), with items modified slightly for relevance to the South African context. The scale included a series of third-person belief statements related to violence, sexual relationships, reproductive health and disease prevention, and domestic chores and daily life. Response categories included "Do not agree at all," "Somewhat agree," and "Agree a lot." We carried out a split-sample exploratory (n=291) and confirmatory (n=290) factor analysis (EFA/CFA) to assess and then test the factor structure, revealing a unidimensional scale with 17 items. Internal consistency reliability of the GEM scale was good: Cronbach's alpha was 0.79 and Raykov's ρ (rho) was 0.71.

Masculine gender-role strain (MGRS) (Table 5.1). MGRS is conceptualized as being a multidimensional construct comprised of aspects of masculinities considered most likely to produce psychological strain in a given context (19, 22). We measured MGRS using a scale that we developed for the South African context for this study by combining sub-dimensions and item wording from two scales commonly used in Western settings: the Gender Role Conflict Scale and Masculine Gender Role Stress Scale (22, 36, 98). Both of these scales have consistently demonstrated good validity and

reliability (22, 36, 98). We revised a draft of the resulting “Gender Role Conflict/Stress” (GRC/S) scale in consultation with local members of the study team in South Africa. The final scale included a series of items in first person, worded to tap into the individual's anxiety and distress—for example, “I worry about” or “...is a measure of my personal worth.” Response categories included “Do not agree at all,” “Somewhat agree,” and “Agree a lot.” Higher total scores represent a higher level of strain related to masculine roles. The EFA (n=289)/CFA (n=290) revealed a multidimensional scale with four factors and 24 items. Reliability of the multidimensional scale was good, with an alpha and rho of 0.83. The sub-dimension *Success, power, competition* can be defined as concern about success as pursued through power and competition (22). *Subordination to women* is discomfort with being outperformed or controlled by a woman (36). *Restrictive emotionality* is having restrictions and fears about expressing one’s feelings, as well as restrictions in finding words to express basic emotions (22). Finally, *sexual prowess* is concern about performance and achievement in the sexual realm (36).

Table 5.1. Inequitable Gender Norms and MGRS Measures

Scale/factor	Items	Properties		
		No. of items *	Raw scores** (mean, range)	Cronbach α/ Raykov’s p
	<i>Do not agree at all, somewhat agree, agree a lot:</i>			
Gender Equitable Men’s Scale (GEMS)	<ul style="list-style-type: none"> • A woman should tolerate violence to keep her family together. • If someone insults a man he should defend his reputation with force if he has to. • A man using violence against his wife is a private matter that shouldn’t be discussed outside the couple. • It is the man who decides what type of sex to have. • Men are always ready to have sex. • Men need sex more than women do. • You don’t talk about sex, you just do it. • A woman who has sex before she marries does not deserve respect. • Women who carry condoms on them are easy. • It is a woman’s responsibility to avoid getting pregnant. • Only when a woman has a child is she a real woman. • A real man produces a male child. • Changing diapers, giving a bath, and feeding kids are the mother’s responsibility. • A woman’s role is taking care of her home and family. • The husband should decide to buy the major household items. • A man should have the final word about decisions in his home. • A woman should obey her husband in all things. 	17	32.5 17-51	0.79 / 0.71

Gender Role Conflict/ Stress (GRC/S) scale- composite	(Composite includes all items below)	24	50.1 24-72	0.83 / 0.83
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GRC/S scale sub-dimensions:

<i>Success, power, competition</i>	<ul style="list-style-type: none"> • I worry about failing and how it affects my doing well as a man. • I am often concerned about how others evaluate my ability to provide for my family. • I strive to be more successful than others. • I sometimes define my personal value by my ability to make money or find work. • Feeling that I am in good physical condition is important to me as man. • Being physically stronger than other men is important to me. • I always strive to win in sports competitions. • Having a girlfriend or wife is part of my idea of being a successful man. 	8	20.7 8-24	0.80 / 0.73
<i>Subord- ination to women</i>	<ul style="list-style-type: none"> • Making more money than a woman is a measure of my value and personal worth. • Being outperformed at work by a woman would make me uncomfortable. • I would be concerned if my friends knew I live with a woman and did any housework. • I do not like to let a woman take control of the situation. • I would be concerned if my friends knew I stayed at home to take care of children while my wife goes to work. • Having a female boss would be difficult for me. 	6	11.6 6-18	0.65 / 0.69
<i>Restrictive emotion- ality</i>	<ul style="list-style-type: none"> • I have difficulty telling others I care about them. • Talking about my feelings during or after sex is difficult for me. • I often have trouble finding words to describe how I am feeling. • I do not like to show my emotions to other people. • Having someone see me cry would be difficult for me. 	5	8.8 5-15	0.65 / 0.72
<i>Sexual prowess</i>	<ul style="list-style-type: none"> • Being able to perform sexually is important to me as a man. • I feel that I always need to be ready for sex with my partner, even if I am tired. • I worry about being unable to become sexually aroused when I want. • It is important to me to know I can drink as much or more than others. • Having sex is part of being a successful man. 	5	9.0 5-15	0.68 / 0.73

* All items for each scale/factor were summed, with 1, 2, 3 points for ascending responses.

** Raw scores incorporate sampling weights and account for clustering

We generated aggregate scores for each individual on GEMS, the GRC/S scale-composite and the GRC/S scale sub-dimensions by taking the sum of the scale items (Table 5.1). Two individuals were missing all 28 GRC/S scale items and were dropped from analyses, for a final sample size of 579. Other missing data for GEMS and GRC/S scale items was minimal; six individuals were missing values on one GEMS item each, and two individuals were missing values on

one GRC/S scale item each. These missing values were replaced by the mean of all other individuals' scores on the same item.

Covariates

We assessed several socio-demographic characteristics including age, highest education level completed, employment status (earned any income in the past 3 months), and marital status.

Statistical Analysis

We performed data analysis in SAS version 9.3 (SAS Institute Inc., Cary, NC, USA). There was no missing data on final variables. The final sample of 579 was weighted, using scaled weights, to account for differential sampling probabilities and to represent the distribution of men aged 18–35 years in Agincourt based on the 2011 AHDSS. We determined weights based on the proportion of total eligible households per village and of total eligible males per household. We also accounted for clustering by village in SAS, which computes robust standard errors using the Taylor series method (164). In addition, we included women in the data set and used a “domain” statement to obtain appropriate variance estimates.

We used logistic regression to examine associations between GEMS, the GRC/S scale, and each outcome variable (concurrency, IPV perpetration, and alcohol abuse). For ease of interpretation we used standardized scores for GEMS, the GRC/S-composite, and GRC/S sub-dimensions. We first used bivariate analysis to examine unadjusted associations between each independent variable and each outcome behavior. We then estimated a series of four multivariate logistic regression models for each outcome behavior (referred to as models 1–4). Models 1, 2, and 3 separately examined the adjusted associations between GEMS (model 1), the GRC/S-composite (model 2), and the GRC/S sub-dimensions (model 3), controlling for demographic covariates. Model 4 included both GEMS and the GRC/S-composite as well as demographic covariates.

Results

Levels of GEMS, the GRC/S composite, and GRC/S sub-dimensions are presented in Table 5.1. Men's scores on both GEMS and the GRC/S scale spanned the full possible range and were normally distributed. For GEMS, the mean was slightly below the middle of the range. For the GRC/S scale, the mean score was slightly above the middle of the range, and the highest mean scores were for the sub-dimensions *Success*, *power*, *competition* and *Subordination to women*.

Levels of HIV risk behaviors and socio-demographic characteristics are presented in Table 5.2. Prevalence of concurrency in the last 12 months was 38.0%, 13.4% of men reported perpetrating IPV in the last 12 months, and 19.9% abused alcohol. Men ranged in age from 18–35 (mean 22.4). Most (60%) had completed some high school. Thirty percent of men had earned any income in the past 3 months. Most participants (85%) had never been married (legal or traditional).

Table 5.2. Weighted Sample Characteristics (n=579 men)

VARIABLE	Weighted mean (range) or %
<u>HIV risk behaviors</u>	
Concurrency in the last 12 months	38.0%
IPV perpetration in the last 12 months	13.4%
Recent alcohol abuse	19.9%
<u>Demographics</u>	
Age	22.4 (18–35)
Education (highest level completed)	
Primary or less	11.5%
Some high school	60.1%
Completed high school	28.4%
Employment status	
Earned any income in past 3 months	31.3%
Marital status	
Never married	85.2%
Divorced/separated/widowed	5.3%
Married (legal or traditional)	9.5%

Concurrency

Results of models examining concurrency as an outcome behavior are presented in Table 5.3. In bivariate analyses, we found that GEMS, the GRC/S-composite variable, and the GRC/S sub-

dimension *Subordination to women* were positively and significantly associated with concurrency. In the multivariate models that were adjusted for demographic covariates (models 1–3), a 1 SD increase in GEMS was significantly associated with a 1.31 increased odds of concurrency (95% CI: 1.07–1.62, $p=0.01$), and a 1 SD increase in the GRC/S-composite was significantly associated with a 1.26 increased odds of concurrency (95% CI: 1.06–1.50, $p=0.008$). In addition, concurrency was significantly associated with the GRC/S sub-dimension *Subordination to women* (AOR 1.36, 95% CI: 1.01–1.83, $p=0.04$). In the combined model (model 4), no variables remained significant.

IPV Perpetration

Results of models examining IPV perpetration as an outcome behavior are presented in Table 5.4. In bivariate analyses, GEMS, the GRC/S-composite, and the GRC/S sub-dimensions *Subordination to women* and *Restrictive emotionality* were positively and significantly associated with IPV perpetration. In multivariate models (models 1–3), a 1 SD increase in GEMS was significantly associated with a 1.31 increased odds of IPV perpetration (95% CI: 1.03–1.65, $p=0.03$), and a 1 SD increase in the GRC/S-composite was significantly associated with a 1.48 increased odds of this behavior (95% CI: 1.17–1.88, $p=0.001$). IPV perpetration was also significantly associated with the GRC/S sub-dimension *Restrictive emotionality* (AOR: 1.50, 95% CI: 1.12–2.00, $p=0.006$). In the combined model (model 4), only the GRC/S composite remained significant (AOR: 1.42, 95% CI: 1.11–1.83, $p=0.006$).

We also found that younger age and higher education were significantly associated with IPV perpetration in the bivariate and multivariate models. Across models 1 to 4, a 1-year increase in age led to roughly a 0.15 decrease in the odds of IPV perpetration ($p=0.001$). Also across models, having finished some high school (versus primary or less) led to a roughly 5-fold increase in the odds of IPV perpetration ($p=0.03$), and having completed high school (versus primary or less) led to a roughly 7-fold increase in the odds of IPV perpetration ($p=0.02$).

Table 5.3. Concurrency: Logistic Regression Results Among Men (n=579)

	Unadjusted: Crude Odds Ratio (95% CI)	Model 1: GEMS AOR (95% CI)	Model 2: GRC/S AOR (95% CI)	Model 3: GRC/S sub-dimensions AOR (95% CI)	Model 4: Combined AOR (95% CI)
GEMS	1.27 (1.05-1.52)*	1.31 (1.07-1.62)*	--	--	1.23 (0.98-1.54)
GRC/S-composite	1.23 (1.02-1.49)*	--	1.26 (1.06-1.50)**	--	1.15 (0.96-1.37)
GRC/S sub-dimensions					
Success, power, competition	1.23 (0.95-1.58)	--	--	1.16 (0.84-1.60)	--
Subordination to women	1.32 (1.07-1.62)*	--	--	1.36 (1.01-1.83)*	--
Restrictive emotionality	0.96 (0.78-1.18)	--	--	0.81 (0.63-1.02)	--
Sexual prowess	1.16 (0.09-1.38)	--	--	1.05 (0.82-1.34)	--
Age	1.01 (0.97-1.06)	1.04 (0.98-1.10)	0.65 (0.37-1.14)	1.03 (0.97-1.09)	1.03 (0.98-1.04)
Education					
Primary or less (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Some high school	0.76 (0.42-1.38)	0.60 (0.19-1.89)	0.59 (0.19-1.88)	0.59 (0.19-1.87)	0.59 (0.19-1.90)
Completed high school	1.11 (0.75-1.65)	0.79 (0.29-2.13)	0.71 (0.26-1.91)	0.75 (0.30-1.91)	0.80 (0.32-2.01)
Employment status					
Unemployed (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Employed	0.74 (0.46-1.17)	0.64 (0.37-1.11)	0.65 (0.37-1.14)	0.63 (0.37-1.08)	0.61 (0.36-1.04)
Marital status					
Never married (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Divorced/separated/widowed	1.37 (0.42-4.49)	1.07 (0.23-4.9)	1.15 (0.26-5.12)	1.31 (0.33-5.12)	1.25 (0.31-5.07)
Married	0.68 (0.25-1.85)	0.61 (0.22-1.72)	0.61 (0.22-1.71)	0.65 (0.23-1.86)	0.65 (0.23-1.87)

* p<0.05 ** p<0.01 ***p<0.001

AOR = adjusted odds ratio, CI = confidence interval. Standardized scores were used for all gender constructs. All analyses incorporated sampling weights and accounted for clustering.

Table 5.4. IPV Perpetration: Logistic Regression Results Among Men (n=579)

	Unadjusted: Crude Odds Ratio (95% CI)	Model 1: GEMS AOR (95% CI)	Model 2: GRC/S AOR (95% CI)	Model 3: GRC/S sub-dimensions AOR (95% CI)	Model 4: Combined AOR (95% CI)
GEMS	1.34 (1.06-1.70)*	1.31 (1.03-1.65)*	--	--	1.10 (0.87-1.39)
GRC/S-composite	3.37 (1.74-6.52)***	--	1.48 (1.17-1.88)**	--	1.42 (1.11-1.83)**
GRC/S sub-dimensions					
<i>Success, power, competition</i>	1.28 (0.97-1.68)	--	--	1.08 (0.72-1.63)	--
<i>Subordination to women</i>	1.52 (1.12-2.06)**	--	--	1.27 (0.86-1.88)	--
<i>Restrictive emotionality</i>	1.69 (1.25-2.28)***	--	--	1.50 (1.12-2.00)**	--
<i>Sexual prowess</i>	1.02 (0.77-1.34)	--	--	0.84 (0.56-1.27)	--
Age	0.90 (0.84-0.97)*	0.86 (0.82-0.94)**	0.85 (0.78-0.94)**	0.87 (0.79-0.94)**	0.87 (0.79-0.95)**
Education					
Primary or less (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Some high school	5.99 (1.39-25.93)*	5.74 (1.22-27.08)*	5.37 (1.23-23.35)*	4.92 (1.13-21.51)*	4.95 (1.14-21.49)*
Completed high school	6.62 (1.43-30.62)*	8.54 (1.53-47.73)*	7.09 (1.39-36.19)*	6.46 (1.35-30.97)*	6.55 (1.42-30.29)*
Employment status					
Unemployed (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Employed	1.19 (0.63-2.24)	1.62 (0.82-3.20)	1.67 (0.82-3.42)	1.84 (0.91-3.74)	1.83 (0.92-3.62)
Marital status					
Never married (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Divorced/separated/widowed	1.21 (0.27-5.41)	2.84 (0.72-11.24)	3.03 (0.74-12.30)	2.84 (0.81-10.01)	2.81 (0.78-10.14)
Married	0.60 (0.17-2.20)	1.47 (0.43-5.00)	1.50 (0.42-5.32)	1.55 (0.45-5.30)	1.56 (0.46-5.22)

* p<0.05 ** p<0.01 ***p<0.001

AOR = adjusted odds ratio, CI = confidence interval. Standardized scores were used for all gender constructs. All analyses incorporated sampling weights and accounted for clustering.

Table 5.5. Alcohol Abuse: Logistic Regression Results Among Men (n=579)

	Unadjusted: Crude Odds Ratio (95% CI)	Model 1: GEMS AOR (95% CI)	Model 2: GRC/S AOR (95% CI)	Model 3: GRC/S sub-dimensions AOR (95% CI)	Model 4: Combined AOR (95% CI)
GEMS	1.30 (0.97-1.75)	1.40 (1.04-1.87)*	--	--	1.15 (0.85-1.55)
GRC/S-composite	1.55 (1.17-2.06)**	--	1.58 (1.22-2.03)***	--	1.49 (1.11-1.98)**
GRC/S sub-dimensions					
<i>Success, power, competition</i>	1.69 (1.14-2.51)**	--	--	1.56 (1.12-2.16)**	--
<i>Subordination to women</i>	1.34 (1.01-1.78)*	--	--	1.31 (0.85-1.71)	--
<i>Restrictive emotionality</i>	1.03 (0.80-1.34)	--	--	0.87 (0.65-1.17)	--
<i>Sexual prowess</i>	1.50 (1.14-1.98)**	--	--	1.20 (0.88-1.63)	--
Age	1.09 (1.04-1.14)***	1.07 (0.99-1.16)	1.07 (0.98-1.16)	1.06 (0.98-1.15)	1.07 (0.99-1.16)
Education (highest completed)					
Primary or less (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Some high school	0.43 (0.22-0.83)*	0.42 (0.13-1.35)	0.41 (0.12-1.36)	0.41 (0.11-1.51)	0.40 (0.12-1.37)
Completed high school	1.79 (1.02-3.13)*	0.87 (0.31-2.40)	0.73 (0.28-1.89)	0.77 (0.26-2.27)	0.76 (0.28-2.05)
Employment status					
Unemployed (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Employed	2.03 (1.33-3.09)**	1.50 (0.94-2.40)	1.49 (0.90-2.46)	1.43 (0.88-2.32)	1.46 (0.90-2.38)
Marital status					
Never married (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Divorced/separated/widowed	1.95 (0.65-5.81)	1.08 (0.30-3.86)	1.24 (0.33-4.74)	1.53 (0.34-6.79)	1.21 (0.30-4.82)
Married	1.51 (0.93-2.45)	0.68 (0.23-1.97)	0.71 (0.25-2.07)	0.72 (0.25-2.06)	0.72 (0.24-2.13)

* p<0.05 ** p<0.01 ***p<0.001

AOR = adjusted odds ratio, CI = confidence interval. Standardized scores were used for all gender constructs. All analyses incorporated sampling weights and accounted for clustering

Alcohol Abuse

Finally, results of models examining alcohol abuse as an outcome behavior are presented in Table 5.5. In bivariate analyses, the GRC/S-composite and the GRC/S sub-dimensions *Success*, *power*, *competition*; *Subordination to women*; and *Sexual prowess* were positively and significantly associated with alcohol abuse. In models that were adjusted for demographic covariates (models 1–3), a 1 SD increase in GEMS was significantly associated with a 1.40 increased odds of alcohol abuse (95% CI: 1.04–1.87, $p=0.02$), and a 1 SD increase in the GRC/S-composite was significantly associated with a 1.58 increased odds of this behavior (95% CI: 1.22–2.03, $p<0.001$). Alcohol abuse was also significantly associated with GRC/S sub-dimension *Success*, *power*, *competition* (AOR 1.56, 95% CI: 1.12–2.16, $p=0.008$). In the combined model (model 4), only the GRC/S composite remained significant (AOR: 1.49, 95% CI: 1.11–1.98, $p=0.007$).

Discussion

In this study we examined the association of inequitable gender norms and MGRS with three HIV risk behaviors among men in Mpumalanga, South Africa. As hypothesized, more inequitable gender norms (as measured by GEMS) and higher MGRS (as measured by the GRC/S scale) were each significantly associated with an increased odds of sexual partner concurrency, IPV perpetration, and alcohol abuse. Taken together, these findings build on past research to underscore the centrality of social constructions of masculinity to men’s HIV-related risk behaviors (9-11, 15). This suggests that programs should continue to work with both men and women to challenge inequitable norms related to men’s sexual entitlement, violence against women, and alcohol abuse. In particular, given the high prevalence of sexual partner concurrency found in our study and others in South Africa (4, 47, 49, 56), efforts are urgently needed to challenge the pervasive belief that men need or are entitled to have multiple sexual partners (47). Program experience also suggests the effectiveness of emphasizing the personal costs to men of adhering to gender-inequitable norms and promoting critical reflection on gender equality as a human rights issue (84).

In addition to a cognitive process through which men learn about and adhere to gender norms, to more fully understand and intervene on men's behavior our results suggest the need to also consider the strain they experience from trying to meet, and failing to meet, expectations of themselves as men. Indeed, without addressing the drivers of gender-role strain in men's lives, circumstances may persist that prevent men from enacting more gender-equitable practices, undermining HIV and violence prevention efforts (33). Our results suggest that the MGRS construct can enable us to systematically study men's stress linked to masculine identity in relation to HIV risk. We previously showed that the multidimensional GRC/S scale that we developed to measure MGRS in the South African context had good reliability and structural validity. In the present study, we demonstrated that this scale has good predictive validity by confirming hypothesized associations with the three HIV risk behaviors and also showed that the sub-dimensions provide additional nuance in understanding different behaviors.

Additional quantitative analyses using the four GRC/S sub-dimensions provided more nuanced insight into the effect of MGRS on different behavioral outcomes, as other studies have found (22, 165). *Subordination to women* appears key to sexual partner concurrency, which may suggest that men use sex as a way of asserting power over women. That *Restrictive emotionality* is key for IPV perpetration has also been found in other studies (22). Unidentified and unexpressed emotions may be expressed as anger, hostility, and violence against women and may serve as an impediment to engaging in conflict resolution in relationships. Finally, experiencing strain around *Success, power, competition*, likely due to chronic unemployment or underemployment, may induce maladaptive coping through alcohol abuse as a way of tempering gendered self-expectations.

The Gender Role Strain Paradigm provides a framework to help understand how to prevent or reduce MGRS, which can be used to design and evaluate targeted intervention strategies to integrate into gender transformative programming. Preventing MGRS implies preventing the three theoretical sub-types of strain: discrepancy, trauma, and dysfunction strain (19). Preventing *discrepancy strain* from perceived failures to meet desired roles could involve enabling men to provide financially; for

example, although rare, a few recent programs are explicitly addressing structural barriers, such as by offering microfinance to men (166, 167). Preventing discrepancy strain would also entail normalizing and enabling alternative positive roles for men to play in their families and communities, like engaged fatherhood (11). Preventing *trauma strain* would by definition involve preventing traumatic gender socialization experiences, particularly among boys (for example, witnessing violence in the home or experiencing abuse as child) (168). Finally, preventing *dysfunction strain* could entail reducing adherence to dysfunctional aspects of masculinity that harm men and others. Our results specifically suggest that, in South Africa, addressing men's feelings of *Subordination to women* could reduce concurrency behavior (for example, by challenging the zero-sum game mentality in which women gaining means men losing); helping men move away from *Restricting emotions* could reduce IPV perpetration (for example, through men's support groups); and reducing strain around *Success, power, competition* could reduce alcohol abuse (for example, through income generation and training opportunities).

Even with efforts to prevent MGRS in place, a certain degree of MGRS is likely to persist for many men. Therefore, how men *cope* with MGRS would also impact their risk behavior and should be targeted through intervention. The Transactional Model of Stress and Coping suggests that unlike avoidant/maladaptive coping strategies like restricting emotions, acting out violently, or abusing alcohol, active/adaptive coping strategies produce psychological and behavioral benefits (105, 169). Active/adaptive strategies include trying to change a stressful situation through problem solving and information seeking, and, particularly for stressors like unemployment that are less amenable to change, emotional regulation, including venting feelings, addressing guilt from past behavior, and seeking social support (105). Relevant interventions have primarily been implemented on a small scale in the United States and involved multiple sessions of individual or small-group psychotherapy. They have demonstrated some effects on MGRS, particularly *restrictive emotionality* (22, 107, 108). Such intensive counseling may be cost-prohibitive in lower-resource settings like rural South Africa.

However, program experience in the African setting shows that men's groups can be beneficial in providing a safe space for men to express worries, share personal stories, and seek advice (34, 84).

While our finding that younger age was associated with IPV perpetration was in line with previous studies (170, 171), the finding that higher education was associated with IPV was surprising. Perhaps men who have passed matric or university (sometimes in urban areas) have high expectations for earning potential and status but are confronted by few employment opportunities in their rural communities, leading to frustration that is then enacted in through partner abuse. In contrast most studies worldwide on risk factors for men's IPV perpetration show either no effect or a protective effect of higher education (170, 172), although a recent analysis of data from the six-country IMAGES study showed that higher education was associated with an increased risk for sexual violence perpetration in Rwanda and India (68). There is little but conflicting evidence from South Africa on men's education level and IPV. Though two studies in Cape Town municipalities found a slightly protective effect or no effect of men's higher education (18, 173), one study by Jewkes et al. in the rural Eastern Cape found that young women's experience of IPV was associated with their male partner being educated to matric or higher (174). More research is clearly needed to examine the link between men's educational achievement and IPV perpetration in rural South African communities.

Our findings should be interpreted with several limitations in mind. First, our data come from a cross-sectional survey, which limits our ability to determine temporal and causal order of relationships between variables. It is possible that changes in behavior could produce changes in gender norms or MGRS, rather than (or in addition to) the other way around. Second, it is unclear why in combined models (model 4) we found that effects of gender norms and sometimes also MGRS were attenuated. This could indicate collinearity, although GEMS and the GRC/S scale are only moderately correlated ($r=0.48$) and typical tests such as the variance inflation factor, or assessing model fit for a factor including all GEMS and GRC/S scale items together (175), did not suggest collinearity. Findings about attenuation could also suggest mediation, in which inequitable gender norms lead to MGRS, which in turn leads to behavior. We felt that testing mediation models was

premature in our study, particularly given the cross-sectional nature of the data and the new application of MGRS in the African context. Longitudinal and intervention research is needed to examine this pathway. Third, it was surprising that the MGRS sub-dimension *Sexual prowess* was not associated with concurrency. This may be because the set of items forming the sexual prowess sub-dimension did not include any content referent to having multiple partners and instead focused more on men's ability to perform sexually. We previously recommended including specific items about having multiple partners in future versions of this subscale. Fourth, data are based on self-report, which could introduce social desirability response bias (151). Finally, although limiting the sample to men only was necessary to reduce the complexity of the study, we acknowledge that gender is constructed relationally and solutions require involving both men and women (33). In addition, limiting the sample to non-migrating men (necessary to test community mobilization effects of the parent study intervention) may limit generalizability of our findings to migrating men from these communities.

Conclusion

Promoting more equitable gender norms and reducing MGRS could reduce men's HIV risk behavior in this setting, with implications for prevention programs moving forward. Programs seeking to transform gender norms and promote more flexible masculinities at the individual and community levels should be coupled with opportunities for men to play positive roles in their families and communities, efforts to prevent traumatic gender socialization experiences, especially early in life, and skills and resources for more adaptive coping with stress. Research is needed to identify effective strategies to reduce MGRS and detailed longitudinal evaluation of such efforts will help increase impact on HIV vulnerability over time.

CHAPTER 6: “WHAT I WISH I AM UNABLE TO ACHIEVE:” A QUALITATIVE STUDY OF MASCULINE GENDER-ROLE STRAIN AND HIV RISK BEHAVIORS IN MPUMALANGA, SOUTH AFRICA (AIM 3 FINDINGS)

Introduction

A common theme emerging from recent qualitative and ethnographic work on changing masculinities in South Africa is that many men support gender equality in the abstract but are unwilling or unable to enact more gender-equitable practices in their own relationships (13, 28, 29, 32, 159). Some researchers suggest that new norms and pressures are causing a “crisis of male identity,” particularly given the difficulties men experience providing financially for their families, the cornerstone masculine role in South Africa and most societies (11, 29, 32, 159). In a qualitative study in Mpumalanga, South Africa, Sideris (2004) emphasizes the anxiety and ambivalence when men don’t know how to validate their sense of themselves as men, leading one participant to remark, “You have to change and you don’t know how!” (32, p. 45). Therefore, it is increasingly clear that HIV and gender-based violence prevention programs in South African communities will need to address such psychological strain when engaging men as partners, while also holding men accountable for changing harmful behaviors (6, 33, 140).

The Gender Role Strain Paradigm suggests that men experience psychological strain from trying or failing to live up to social and internalized expectations of themselves as men (19). This is commonly referred to as masculine gender-role strain (MGRS). Theory and evidence suggest that experiencing MGRS leads men to engage in behavior that harms themselves and others (19, 21, 22, 25). MGRS is theorized as arising from three sources: from inability to fulfill desired roles (*discrepancy strain*), from traumatic experiences during the gender socialization process itself (*trauma strain*), and from enacting more dysfunctional masculine traits or behaviors (*dysfunction strain*) (19). We conceptualize all three of these sub-types of MGRS as producing the experience of

MGRS as a whole, which in turn is associated with men's risk behaviors. The MGRS construct, developed and widely applied in research in the U.S. context (22, 36), has been largely unexplored to date in the African context and in HIV prevention research.

In a quantitative study we recently showed that MGRS is associated with key HIV risk behaviors among men in rural Mpumalanga, South Africa, where over one-fifth of adults are HIV positive (1, 137). Measured by a multidimensional scale called the Gender Role Conflict/Stress scale that we developed by combining two U.S. scales (22, 36), we found that higher MGRS is significantly associated with men's sexual partner concurrency ($p=0.008$), intimate partner violence perpetration ($p=0.001$), and alcohol abuse ($p<0.001$). Based on these findings, we recommended that programs to change gender norms and reduce HIV and violence risk explore complementary strategies to reduce MGRS. First and foremost, we emphasized that reducing MGRS would require identifying and enabling men to play the socially positive roles that are most important to them in their lives.

Consequently, in this qualitative study we asked men about the roles most important to them in their families and communities, the challenges they face in filling these roles, and their hopes for the future for men in their communities. Our goal was to develop a richer understanding of men's experience of MGRS in the South African context and to see how well this experience aligns with the Gender Role Strain Paradigm. To the extent possible, we also wanted to explore the links between men's experiences of attempting to fill desired roles and key HIV behaviors. Ultimately we also sought to develop ideas for interventions to reduce MGRS in this setting.

Methods

Study Setting

This study took place in the rural province of Mpumalanga, located in northeastern South Africa bordering Mozambique, about 500km from Johannesburg. Twenty-two percent of adults ages 15–49 are HIV positive in Mpumalanga, the second highest prevalence of South Africa's nine

provinces, after KwaZulu-Natal (1). The study was conducted in the Bushbuckridge sub-district, which is typical of many rural areas in the country and is characterized by few employment opportunities, high levels of out-migration for labor, and relative social isolation. Photographs showing the study setting are included in Figure 6.1. Of about 550,000 residents in Bushbuckridge, 99% are black African (176) and the predominant ethnic group is the Shangaan (177). Fifty-two percent of residents, and 65% of youth ages 15–34, are unemployed (176), and the area is highly dependent on government pensions and migrant labor remittances. Within the villages most roads are unpaved, and although many homes have electricity, most do not have piped water (176).

Procedures

Two experienced, local qualitative interviewers conducted individual in-depth interviews with men who consented to be interviewed and audio-recorded. These interviewers were both women between the ages of 40 and 50 and were trained during a three-day training that covered the study's theoretical basis and research questions, interviewing protocol, and interview guide. Each interviewer conducted, transcribed, and translated one pilot interview. These two transcripts provided an opportunity to refine the interviewers' probing techniques and revise the interview guide through consultation.

Interviews lasted 45–75 minutes and were held in a private, closed room in the participant's home or another location of his choosing. The interview guide helped structure the discussion, and interviewers also added spontaneous probes. After asking about demographic information, the interviewer began with an introductory question about what a typical day is like for the participant. Next, the interviewer asked the participant his views about what it means to be a man and what it means to be a woman. Interviewers then asked the participant to identify the three most important roles to him in his life. For each of these three roles, in turn, they asked what the role means to the participant, how he learned about it, the extent to which he feels he is filling the role, and what challenges he has faced in trying to do so. When finished discussing all three roles, the interviewer concluded by asking the participant about his hopes for the future for men in his community. It is

important to note that we did not explicitly ask about HIV risk behaviors in the interviews but rather allowed this topic to come up organically.

Figure 6.1. Photographs from the study setting.



All interviews were conducted in the local language of Shangaan, following the participants' preference, and were audio-recorded with a digital recorder. The interviewers transcribed each interview verbatim and translated it into English. We then reviewed translations for clarity in English and revised as needed in consultation with the interviewers.

The Institutional Review Board at the University of North Carolina-Chapel Hill and the Human Research Ethics Committee at the University of the Witwatersrand in South Africa approved this study.

Analysis

We used an iterative process including both narrative and coding procedures to analyze the data. After reading through all interviews a number of times and making notes, we wrote 1–2 page narrative summaries for each to capture the 'story' each participant told (136). We also coded all interviews in Atlas.ti software (Scientific Software Development, Berlin, Germany) using both topical and emergent codes. We created a preliminary code list based on the topics covered in the interview guide and added additional codes based on emerging themes. We then generated reports with all quotes for each code and reviewed and compared across these reports to identify key themes. Finally, we began identifying ways in which themes fit together as a whole. This process of synthesizing findings was informed by the main assertions of the Gender Role Strain Paradigm, because part of the study's purpose was to assess its salience to the South African context. We chose to organize our findings by the three sub-types of MGRS because this was the clearest way to communicate the findings, although we were careful to remain open to allowing other perspectives to emerge. In addition, we paid particular attention in our analysis to the three HIV risk behaviors examined in the related quantitative study mentioned earlier (sexual partner concurrency, intimate partner violence perpetration, and alcohol abuse).

Results

Men ranged in age from 19 to 35 (mean=27) (Table 6.1). One-third of men were married and living with their wives and children; these men tended to be older than age 30. The other two-thirds of men were unmarried and living with extended family (most commonly their mother, siblings, and siblings' children). Many of these unmarried men had biological children they did not live with, and a number were currently in relationships, including a few with the mother of their child.

About two-thirds of men were unemployed, but of those, half still earned some income in the past 3 months, mostly through "piecework" such as small electrical or plumbing work around their village (data not shown). Half of participants completed some high school but did not finish (the youngest participant was still currently in school), two completed high school, and seven had attended university or Technikon (trade school).

Table 6.1. Demographic Characteristics of Participants (n=18)

	Mean (range) or n (%)
Age	27.2 (19-35)
Marital status	
Never married	10 (56%)
Divorced	2 (11%)
Married (legal or traditional)	6 (33%)
Number of biological children	
0	5 (28%)
1	8 (44%)
2	5 (28%)
Live with at least one biological child	6 (33%)
Current living situation	
Alone	0 (0%)
With nuclear family only (wife and biological children)	4 (22%)
With nuclear and extended family	2 (11%)
With extended family only	12 (67%)
Employment status	
Employed	6 (33%)
Unemployed but earned income in past 3 months	5 (28%)
Unemployed and did not earn income in the past 3 months	7 (39%)
Education (highest level completed)	
Some high school	9 (50%)
Completed high school	2 (11%)
University or Technikon	7 (39%)

We present the rest of our results in three parts. First, we briefly describe participants' beliefs about what it means to be a man and a woman. Next, we describe the roles that are most important to them and what these roles mean to them. We then discuss evidence of the three sub-types of strain defined previously—discrepancy strain, trauma strain, and dysfunction strain.

Meanings of Being a Man, Woman

Nearly all participants described the man as the household head/leader and the woman as the helper/follower. This gendered power relationship was presented as the natural order of family relations and necessary for maintaining household balance. Most men saw women's roles of taking care of children and the home as an important complement to a man's role, without which households would not function well. Although participants expressed a range of views, from gender-inequitable (e.g., some said a woman should obey her husband and should not work outside the home) to gender-equitable (e.g., a man can start a cooking fire just like a woman can), these views still fell within the boundaries of a gendered power relationship in which the man is the head of the family.

"[Being a man] means a provider or someone who succeeds in terms of family issues or doing things for your family. All in all if you are men...you are born so that you can be able to support your family. [Later segment] To be a woman means that you should be submissive to your husband. She should respect her husband and follow her husband's rules." (25 years old, never married, 1 child)

What Roles Are Most Important to Men in Their Families and Communities?

Framed within these gendered power relationships, nearly all men identified being a household head or providing financially for his family as a central role currently or in the future. Rather than being defined around professional success, providing was defined as meeting the basic needs of the household and ensuring the safety and well-being of its members. Playing this role involved demonstrating responsibility and encouraging mutual respect, both being shown respect by other household members as well as showing them respect. Men who were married tended to identify the role of household head as opposed to provider, which seemed to involve an additional function as ultimate decision-maker, with responsibility to all under his roof. Men who were unmarried often

described their current role providing as a son in the house but later transitioned to talking about what they ultimately wanted this role to look like in the future when they were married and living with their wife and children:

“...I want to see myself living in my own home. And I want to do that while I’m still young.” [Later] “Every man wants to end up being a father and have a family, because you can have a home but don’t have a wife and a family.” (25 years old, never married, 1 child)

Most men also identified a current role related to family relationships. The most common among these was ‘son’ (9 men) given that most men were unmarried and living with their parent(s). Being a son meant providing what one could to the household, not being a financial drain on his parent(s), and obeying his parents’ rules. Almost all men who were married identified being a ‘husband’ as an important role (5 men). To them being a husband meant having a loving relationship with his wife and being responsible for providing for and protecting her as well as their children. Although these married men were also living with their children, they tended to fold the role of ‘father’ into their description of the provider and husband roles and only 2 men mentioned their role as father specifically. To these two men, being a father meant providing for the child’s needs and protecting him/her, as well as being a role model. Nearly all men who were not living with their biological children did not identify being a father as one of the most important roles to them.

Besides roles related to providing and family relationships, about half of the 18 participants also identified a current or past role related to helping and protecting others in their community. For example, a number took pride in being a role model to younger brothers and other young men in their community, encouraging them to succeed in school and avoid drinking, having girlfriends, and committing crime (“stealing other peoples’ things”). Other men felt they contributed to protecting their communities by serving as members of their local community policing forum. Finally, five men mentioned being a sportsman (mainly playing soccer) as an important role to them, which helped them stay physically fit, demonstrate skill, and feel part of a team.

Thus the role of provider was most salient to the men we interviewed, and this role was closely related to roles in the family and community as well. We now turn to the strain men were experiencing related to these roles.

Discrepancy Strain From Inability to Fill Desired Roles

Discrepancy strain involves negative psychological consequences from men's inability to fulfill social and internalized expectations of themselves as men (19). Discrepancy strain was evident in all of our interviews and stemmed from a number of sources.

Across the board, unemployment or underemployment was producing discrepancy strain around the inability to provide financially. Most men were not earning any income despite their efforts to find work. Even for those who were able to find piecework in their villages, most saw this as not paying enough and not offering stable enough work. A typical statement illustrating discrepancy strain was: *"What stresses me about being a good provider is that I don't have a job, and what I wish I am unable to achieve"* (30 years old, married, 1 child). The statement of another participant, a pastor-in-training who often speaks confidentially with men in his community, reflects how common this situation is:

"The main challenge [men face] is in the family and it is the challenge of finances. If the man is not bringing enough money home sometimes this becomes a challenge and makes his behavior not be good towards those who are close to him." (35 years old, divorced, no children)

The nature of this strain from unemployment differed, however, depending on men's living situation. Men who were married and living with their wives and children, yet unemployed, expressed concern mainly around their ability to cover their household expenses.

"What is difficult, like now since I'm not working, we are unable to meet our family needs... Like a baby must have nappies (diapers) and body lotion, so when we spend that money on food and the baby's needs, it is then that I can see that this money is not enough for our family. So I'm always thinking a lot because I'm not working." (32 years old, married, 1 child)

Despite such a sense of depression and frustration due to unemployment, these married men also expressed a sense of satisfaction with their life position of being married and a head of their own

household, from which they could also give advice to other men. Most also described a relationship of love, trust, and open communication with their wives, perhaps further buffering the stress from unemployment.

In contrast, for unmarried men living with extended family, the challenge posed by unemployment seemed fundamentally linked to the difficulty they anticipated in establishing their own household. The norm in this setting is that men and women do not live together until they are married and that marriage cannot take place until the man pays *lobola* (bride wealth) to the prospective bride's family. After *lobola* has been paid and a wedding ceremony has taken place, a man can then establish his own household with his wife. A 25-year-old unmarried man, who made this a focus throughout his interview, clearly described this situation:

“For now I don't have my own family. I want to get a job so that I can pay lobola for my wife, and after that I can build a house for my child. [Later] But it's only God who knows because I won't build a house if I don't have money...and in order to have money I should have a job. If I can get a job today or tomorrow I can be able to plan for this, that maybe next year I will have a plot to build a house, next year before Easter I pay lobola to my wife, and before December time I start to make a foundation and start building a house.” (25 years old, never married, 1 child)

Despite the strain caused by this life situation, no participant reflected on its underlying structural and cultural determinants and instead seemed to accept it as a given.

A related source of discrepancy strain for unmarried men was around fatherhood. Six men had biological children but were not living with them. In most cases they had had these children with a girlfriend when younger, often adolescents. When asked about how they felt about this situation, these men consistently talked about wanting to be “closer to” their child or even to bring the child to live with them but saw this as impossible due to unemployment. For a few men who were currently in relationships with the mothers of their children, due to their inability to pay *lobola* they were waiting to get married to live with their wife and child. Most, however, were not living with the mothers of their children but still saw unemployment as the biggest barrier to having a closer relationship with their child.

“I: I heard you earlier in the interview saying that you have a child that lives with her mother at [another village]. What are the difficulties that you come across concerning your child?

P: Now as I’m unemployed I can hardly do anything for her, I don’t buy her anything. It makes it difficult for me to see her and I don’t think I can see her anytime soon as I don’t have money. I sometimes go and see her after 6 months. I think unemployment is the biggest issue that makes me not have enough time to see my child. That is the problem that I’m facing and it makes me really stressed. I think about her and I miss my kid a lot.” (25 years old, never married, 1 child)

In response to this sense of hopelessness and depression related to being a more engaged father and providing financially, many men seemed to have developed strategies to buffer these effects on their well-being. First, nearly all expressed a strong ethic of perseverance to overcome the challenges posed by unemployment. It was a common occurrence for men to briefly express strong strain and anxiety around unemployment but immediately follow with a statement about good things sure to come: *“...but it doesn’t stress me too much because I have told myself that there are good things that are still coming to me”* (29 years old, married, 2 children). Many also linked this hope to their faith, for instance: *“...as long as there is God I will be able to achieve”* (30 years old, married, 1 child).

Another strategy men had developed to buffer the effects of challenges from unemployment was to temper the strict definition that “to be a man you have to work.” Although about a third of men specifically stated this rigid belief, it seemed that other men had expanded their idea of the provider role to include respectful and responsible behavior, including making an effort to find work.

“If I say this person is a man it is when he is able to support his child and family. I don’t say that if a man is not working it means that he is not a real man. If he works it is an advantage to him and also to his family.” (25 years old, never married, 1 child)

Although the exception, other men described providing by contributing to the well-being of the household in non-traditional ways. For example, two mentioned cooking for siblings’ children when needed, and another was proud that he encouraged his wife to go back to school to support their family’s future income. In addition, although not compensating for inability to play more central roles, men also valued and found meaning as men through a range of other roles in the community.

For example, they were playing soccer as part of a team, trying to be a role model to younger brothers and other young men in their community, or serving as members of their local community policing forum. Some also described their church involvement as providing spiritual strength and a sense of belonging.

In sum, nearly all men were experiencing discrepancy strain from unemployment or underemployment. While many of the married men felt unable to provide financially for their families, it was unmarried men who bore the brunt of the strain because unemployment prevented them from playing the roles most important to them in their lives related to having and providing for their own family. Nonetheless, many were responding to this strain through perseverance, broadening the definition of providing, and finding meaning as men through other positive roles in the community.

Trauma Strain From Intense Gender-Role Socialization Experiences

Gender-role trauma strain is theorized to arise as a consequence of the gender socialization process itself and specifically through intense experiences, particularly during childhood and adolescence (19). Trauma strain is conceptualized in the literature as contributing directly to the amount of MGRS a man experiences, as well as heightening men's fear of negative reprisal for violating traditional gender roles. There was less evidence in our interviews for trauma strain than for discrepancy or dysfunction strain. This may be because interviews did not focus on childhood and adolescence (although men were asked about how they learned about each role, including while growing up). However, it also may be because men tended to avoid revealing the kind of emotional vulnerability that traumatic experiences may evoke.

Still, we identified a number of possible sources of trauma strain. The clearest was peer pressure, particularly during adolescence, to drink alcohol, smoke dagga (marijuana), and have multiple sexual partners. In particular, a number of men expressed strong discomfort with the way their adolescent peers (in the past or present) treated women and pressured them to treat women. For

example, the youngest participant, age 19, seemed distressed by how he sees other young men treating women:

“P: If I’m going around the village and see other boys threatening girls I don’t feel well. It is unforgettable if you meet them in the streets. This is a challenge I am facing...”

I: How do you deal with the problem of boys who threaten girls?

P: Sometimes I talk to them but if they don’t listen it is difficult for me.” (19 years old, never married, no children)

In addition, an older participant described the regret he feels about how he and his peers treated women when he was first in a relationship with his now wife:

“...we boys we called the shots, everything like the girl must listen when I say today I’m coming [i.e., for sex], she must make some plans. So in the past pride has affected us. You see...the group of the boys, that’s where you influence each other badly, that this is how I should act with my girlfriend...that [she] must be treated so and so ... Immediately when you start to fill this role [of being a household head] you realize that if I continue with this strategy [my wife and I] won’t agree with each other and there will be lot of violence.” (32 years old, married, 2 children)

Related to such sexual behavior, a number of men alluded to trauma strain around negotiating how they would respond when their girlfriends had become pregnant when they were young and unmarried. This was most clearly described by a 22-year-old man who, unlike other participants, had married his girlfriend after she became pregnant when they were teenagers and also stopped having relationships with other girls. This young man’s whole interview revolved around going through this experience, suggesting how intense a process it was for him. He says,

“At first it was difficult for me to understand that I’m a father but later on I have accepted it...In the past I was having relationships with other girls. When she got pregnant those relationships affected my relationship with her, so my friend and my parents advised me to stop because it will affect her since she was pregnant at that time. So I have stopped doing such things.” (22 years old, married, 1 child)

For this young man, this was clearly an active process in which he felt supported to diverge from his peers. Most men whose girlfriends become pregnant likely struggle with how to deal with it but choose a different path than this participant did. This is perhaps in part because this has become

expected and normal behavior among young men in this context, as well as marriage being made difficult by unemployment and inability to pay *lobola*, as described earlier.

Other theorized sources of gender role trauma strain, thought to be common in the study setting, were either mentioned but not described as stressful or not mentioned at all. For example, during the interviews many men mentioned that their father had passed away (often when they were young) or had not lived with them but did not offer details about the effect this had on their lives. Some men alluded to experiencing abuse as a child, describing how being punished as a child taught them to be a respectful son to their parents, but did not describe this in detail nor as traumatic in nature. No participant described witnessing abuse at home, and a number stated that there had not been such abuse as evidence of their parents being good role models. Male initiation rituals, although potentially beneficial in some respects (11, 178), are another possible source of trauma strain that was never mentioned by participants. According to the 2012 South African National HIV Prevalence, Incidence and Behaviour survey, 71.5% of men ages 15 or older in Mpumalanga and 52.5% nationwide have been circumcised “in traditional settings on the mountain or in the bush/at initiation school” (1, p. 63). Our informal conversations with community liaisons also suggested that majority of men in Mpumalanga may still undergo these rituals, which are lengthy and intense experiences.

Therefore, in sum, along with discrepancy strain, men appeared to be experiencing trauma strain from intense gender socialization experiences like peer pressure to mistreat women and negotiating how to respond when a girlfriend becomes pregnant. However, men did not discuss or disclose other traumatic/intense gender socialization processes theorized to increase MGRS and thought to be common in the study setting.

Dysfunction Strain From Enacting Harmful Aspects of Masculinity

The Gender Role Strain Paradigm suggests that experiencing trauma strain and discrepancy strain lead men to turn to more dysfunctional masculine characteristics or behaviors that harm men themselves and others around them, like being sexually exploitative, aggressive, and violent. Doing so creates even more strain, referred to as dysfunction strain (19, 21). In our interviews, a sense of

dysfunction strain emerged through men's unprompted descriptions of the harmful effects of other men's characteristics or behavior and of their own past behavior.

Over half of the 18 participants expressed concern about men's tendency to restrict their emotions and avoid seeking help. According to the pastor-in-training,

"Men need help because when they are faced with challenges, they keep it confidential and in the end it becomes a problem and they end up being abusive...they are faced with challenges that they were hiding and not sharing with anyone. I think men can learn to talk more." (35 years old, divorced, no children)

As the quote above suggests, many participants linked restricting emotions to aggression and conflict in the home, including men's perpetration of violence against their partners.

"I don't beat others, yes in the past I was doing that but now I don't do it anymore...I can say at that time I was very young and not thinking enough. You know when something bothered me I was taking it wrong; even if someone tried to explain I was not considering that what that person told me was important, and from there I was beating my partner or destroying things at home." (29 years old, married, 2 children)

Alcohol abuse, often described as stemming from unemployment-related depression, was also seen as dysfunctional in that it further enabled men's sexual risk behavior and relationship conflict. In fact, unprompted, 11 of the 18 participants mentioned alcohol abuse as a concern they had about men in their community that they would like to see change in the future.

"Let's take the family of the one who is addicted to alcohol... you find that his children grow without direction, they can grow without getting a chance to see the father. Or sometimes even the wife who is at home, she doesn't spend time with her husband because he is always drunk. He comes home late to sleep and in the morning he just goes without seeing them, meanwhile...the problems pile up in the family." (32 years old, married, 2 children)

Critically, evident in the quotes above is that men clearly recognized these behaviors as dysfunctional in nature: "...when there is violence it is no longer good to the children and even to you it creates some wounds inside your heart" (32 years old, married, 2 children). Many overtly challenged men's abuse of their power over women in relationships, although still viewing this power dynamic as necessary to a certain extent. For instance, the pastor-in-training said:

"... to me to be a man it's a leader and even in nature a man has been given power. Not power to destroy but power to build and see that there is safety in the community

between men, women and children...Sometimes we end up not understanding what a man is, thinking that to be a man it means we have to exercise the power that we have in a bad way, like to abuse other people.” (35 years old, divorced, no children)

Many men attributed such beliefs to changing norms around gender equality.

“Yaah...the belief is that men have unlimited authority over women and that they should control everything, meanwhile it is not that way. So for those who are stuck in the past they need to understand that change is happening, that to respect women or give them rights does not mean that they will disrespect you, it depends on how you do it.” (32 years old, married, 2 children)

Further, younger men in particular described actively seeking to avoid peer pressure to drink and have sexual relationships by being involved in sports or the church.

Yet strikingly, despite such critical reflections on other men’s dysfunctional behaviors and sometimes their own *past* behavior, not one man described his own *current* dysfunctional behavior—not alcohol abuse or indeed any drinking at all, not violence perpetration, and not having multiple sexual partners or putting himself or others at risk for HIV.

In sum, men recounted a strong sense of dysfunction strain from engaging in behaviors that harm men themselves and others around them, including restricting emotions and alcohol abuse, which were seen as contributing to family discord and violence. Further, they tended to describe such behaviors as men’s response to discrepancy strain, particularly around unemployment or feeling subordinated to women. Rather than accepting these behaviors as justified given the challenges men face, participants were calling out other men on these behaviors and clearly articulating how engaging in these behaviors was a strategy men used to maintain power over women. However, no men disclosed currently engaging in these harmful behaviors themselves.

Discussion

By asking men in Mpumalanga about the most important roles to them in their lives, as well as their vulnerabilities and hopes related to these roles, we were able to develop a better understanding of MGRS and its consequences for men’s HIV risk behavior. Our findings support the main proposition of the Gender Role Strain Paradigm, that the experience of trying, and failing, to live up to masculine expectations produces strain, which then leads men to engage in dysfunctional

behaviors that harm themselves and others (19). Key among the dysfunctional behaviors men identified were having multiple sexual partners, perpetrating intimate partner violence, and abusing alcohol, supporting our previous quantitative findings. In addition, the interviews showed that men were experiencing all three theorized sub-types of MGRS. The most apparent of these was discrepancy strain, primarily due to men's inability to provide financially, a common issue raised in other recent studies in the country and the region (11, 29, 32, 159). Thus, according to Barker and Ricardo (2005), "Making available employment and training opportunities that provide income necessary...for young men to achieve socially recognized notions of manhood, and that provide real opportunities for skills development, would go a long way to reducing at-risk behavior and preventing conflict among young men" (11, p. 58). Given the difficulties and long-term nature of increasing employment in areas like Mpumalanga, it seems critically important to help men understand the nature of the broader structural causes of unemployment and income inequality that leaves them with few prospects of finding work. To the extent that men understand their joblessness in context, they might blame themselves less, feel less shame and inadequacy, and engage in fewer destructive behaviors. They might instead find a sense of purpose, connectedness, and empowerment in challenging the economic policies (or their lack of implementation) that relegate them to chronic underemployment.

Our findings also reflect a characteristic of the rural South African context that may serve to intensify discrepancy strain and MGRS in the population: the prolonged delay in or impossibility of getting married and establishing one's own household. For black South Africans, the legacy of forced removals from land under apartheid, the destabilizing effects of poverty and unemployment, labor migration from rural areas to urban townships and the mines, the commercialization and associated rapid increases in *lobola* prices, and more recently the HIV/AIDS epidemic have led to an unprecedented decline in marriage over the past four decades (103, 159, 179). Such forces have been described as eroding men's ability to "become men" by working, paying *lobola*, getting married, and becoming head of a household (11, 32, 95, 180). Statistics cited by Posel et al. (2011), similar to other

recent studies, show that only about one-quarter of black South Africans ages 20–45 are married (legal or traditional), and about 10-15% of unmarried individuals are cohabiting (179, 181, 182). Using data from the South Africa Social Attitudes Survey, Posel et al. (2011) also showed that nationwide in 2005, 47% of black South Africans “strongly agreed” or “agreed” with the statement: “The payment of lobola is the main reason why many people do not get married these days” (179).

Examining this phenomenon through the lens of the Gender Role Strain Paradigm, our results suggest that this situation prevents most men from playing the life roles they value: providing for their own family, being a husband, and being an engaged father. It may also lead to chronic stress and depression that some men may cope with in maladaptive ways, including through alcohol abuse and violence. Additionally, from a more epidemiological perspective, this delay in age at marriage may create an extended period in which most men continue to engage in risk behaviors they established when young. They may have greater difficulty changing such long-habituated behaviors, with implications for HIV transmission (183).

Despite experiencing such stressful life situations, most of the men we interviewed were highly critical of men’s abuse of power and concerned about the impact of men’s alcohol abuse, sexual behavior, and violence on families and communities; however it was unclear to what extent they challenged these behaviors directly with their peers. They also consistently described regretting their own such past behavior. These more gender-equitable perspectives have been found in other studies and have been highlighted as a resource for HIV and violence prevention interventions (6, 11, 31, 32, 35, 140). Community-level efforts are needed to break the culture of silence around such norms and behaviors and to encourage men to speak out about their concerns. Still, nearly all of the men we interviewed maintained such progressive beliefs within the frame of the man being the head of the family and the woman being subservient, serving to maintain gendered power in relationships. Directly challenging such beliefs is likely to decrease men’s experience of gender role strain over time and may also increase men’s willingness to challenge other men’s beliefs and harmful practices (184). A key strategy will be promoting critical reflection on the “zero-sum” perspective on power in

which when women are seen as winning, men are seen as losing (33, 140). Shefer et al. write, "...shifting gender relations in the direction of 'power with' instead of 'power over' is perhaps a necessary prelude to lasting social change and curbing the HIV epidemic in South Africa" (29, p. 157).

Our interviews also revealed men's reluctance to critically examine and engage emotionally with the strain they were personally experiencing. According to O'Neil, "For many men, expressing feelings and vulnerabilities and giving up some power and control may be violations of their masculinity ideology and could be threatening to their male identity" (22, p. 398). This may be an important barrier to behavior change for future research and programs to consider addressing, perhaps by providing opportunities for men to engage with their emotional vulnerabilities, for example in small men's groups. Such reluctance was evident for all three sub-types of strain. For discrepancy strain, we saw the unquestioned/unexamined impossibility of marrying and establishing one's own household, that is, it was taken as a given, perhaps rendered invisible to some extent by how common this impossibility is. The same was true for the perceived impossibility of being an engaged father or of having had an engaged or even present father himself. For trauma strain, we saw the possible omission of or unexamined emotions about traumatic experiences in childhood/youth, including their own experiences of abuse, witnessing abuse in the home, and male initiation rituals, all of which are highly prevalent in this context and may be linked to adverse psychological and behavioral outcomes in adulthood (1, 168, 185, 186). For dysfunction strain we saw that even while men question other men's dysfunctional behavior and describe their own past behavior, not a single man admitted his own current behavior. It is difficult to draw conclusions based on the above omissions and more research is needed. If present, theory suggests such reluctance to critically examine and engage emotionally with stress represents maladaptive coping that further entrenches this stress rather than reducing it (105).

These results should be interpreted with several limitations in mind. First, as noted previously, our participants were reluctant to describe their *current* HIV risk behaviors, limiting our

ability to connect the strain they described with behaviors they were currently engaging in. Second, there was also little discussion of the effects of HIV/AIDS on men's lives (including participants' own HIV status), shown in previous studies to have a strong impact on changing masculinities (74, 187, 188). Such avoidance of discussing HIV tends to be common in this setting because it is seen as a personal issue (114). Third, although difficult to assess, having female interviewers may have made men more wary to disclose sensitive information and more likely to express more gender-equitable beliefs than they actually held (134). Fourth, the relatively short interviews (45–75 minutes) may have limited interviewers' ability to build rapport with participants (135).

Conclusion

Our findings have important implications for violence and HIV prevention efforts in South Africa and beyond. They demonstrate the centrality of MGRS in men's lives, underscoring our earlier call for gender transformative programs to explore complementary strategies to reduce MGRS. In Mpumalanga, and likely across sub-Saharan Africa, MGRS most clearly stems from pervasive unemployment. Therefore any strategies to reduce MGRS would be well served to include job creation and training opportunities for both women and men (11, 166). Community Mobilization approaches, in which men and women come together in sustained collective efforts toward common goals, may hold particular promise in advocating for such opportunities, as well as getting men to speak out and act on their concerns about other men's harmful behavior and creating a more enabling and accepting social environment for men who are trying to change (34, 114). As part of such efforts, our results and those of others suggest that it is critical to provide opportunities for men to engage with their own emotional vulnerabilities—for example, around sharing power in relationships, past traumatic experiences, and guilt about their own harmful behavior—and to critically reflect on how these vulnerabilities are connected to social constructions of masculinity and broader structural forces (6, 84).

CHAPTER 7: CONCLUSION

The overarching goal of this dissertation was to better understand how gender role expectations affect key HIV risk behaviors among men in Mpumalanga in order to develop more effective prevention programs. Our findings advance the literature on the conceptualization and measurement of gender norms and MGRS, contribute to a growing body of research on the effects of inequitable gender norms on HIV risk, and demonstrate links between MGRS and HIV risk. In this chapter, we synthesize the findings for the three study aims, address the study's strengths and limitations, and discuss implications of the findings for future research and public health practice. We pay particular attention to implications for future research and practice related to MGRS because of its nascent application to HIV prevention research.

Summary of Findings

Taken together our findings build on a wealth of previous research showing that social constructions of masculinity shape HIV vulnerability (11, 78, 82, 155, 189). We found that men's HIV risk behaviors are prevalent in Mpumalanga, including sexual partner concurrency (38%), intimate partner violence perpetration (13%), and alcohol abuse (20%). Such practices place men and their intimate partners and families at risk for HIV and other adverse health and psychosocial outcomes.

Valid and reliable measures of theoretical constructs related to gender roles are needed for research on risk behaviors and evaluation of programs seeking to prevent these behaviors. We evaluated two such measures in this study and found both to be valid and reliable, although we made certain recommendations for improvements.

GEMS is now commonly used in research worldwide, but there was little published information about its factor structure, despite the fact that it covers diverse content areas from

violence to sexual relationships to roles in the home (8). The GEMS scale we evaluated was adapted slightly to the South African context, although the items were not substantially different from the original or subsequent scales. Factor analyses suggested a four-factor structure (according to the content domains), but the reliabilities of each factor were unacceptably low, suggesting that items relating to inequitable gender norms do indeed form a unidimensional scale. The reliability of the final 17-item scale was good with a Cronbach's alpha of 0.79 and Raykov's rho of 0.71. Model fit in the CFA, however, was only adequate, suggesting that the scale could be improved in the future through generating and testing new items. In particular, the low factor loadings (0.2–0.4) of a number of GEMS items related to acceptability of men's use of violence against women, some of which were dropped from the final scale, raises concerns about our ability to measure such attitudes well in a context of high IPV rates, which make it critical to do so.

In contrast to GEMS, the Gender Role Conflict/Stress (GRC/S) scale was a new multidimensional scale we created for the South African setting by combining two other validated multidimensional scales used primarily in Western settings (22, 36). Therefore we were uncertain whether the MGRS construct would be salient to men in our study setting and whether the scale would perform adequately. In factor analysis we found that GRC/S scale items loaded on four sub-dimensions, only slightly different from those we had anticipated when creating the scale. In addition we found that these four sub-dimensions loaded on a higher-order factor, the latent variable MGRS. The model fit of the multidimensional scale was very similar to the fit for GEMS, representing adequate fit. This suggests that there is room for improvement in the scale in the future. Reliability of the multidimensional GRC/S scale was very good, and higher than GEMS, with an alpha and rho of 0.83, and reliabilities for each factor were also adequate, above or near 0.70 for alpha and/or rho.

We found additional support in our qualitative study for the four GRC/S scale sub-dimensions found in the factor analyses. These sub-dimensions represent patterns of MGRS that are measureable through quantitative survey items. Related to *Success, power, competition*, nearly all men articulated a personal sense of strain around success and power due to unemployment. A sense of

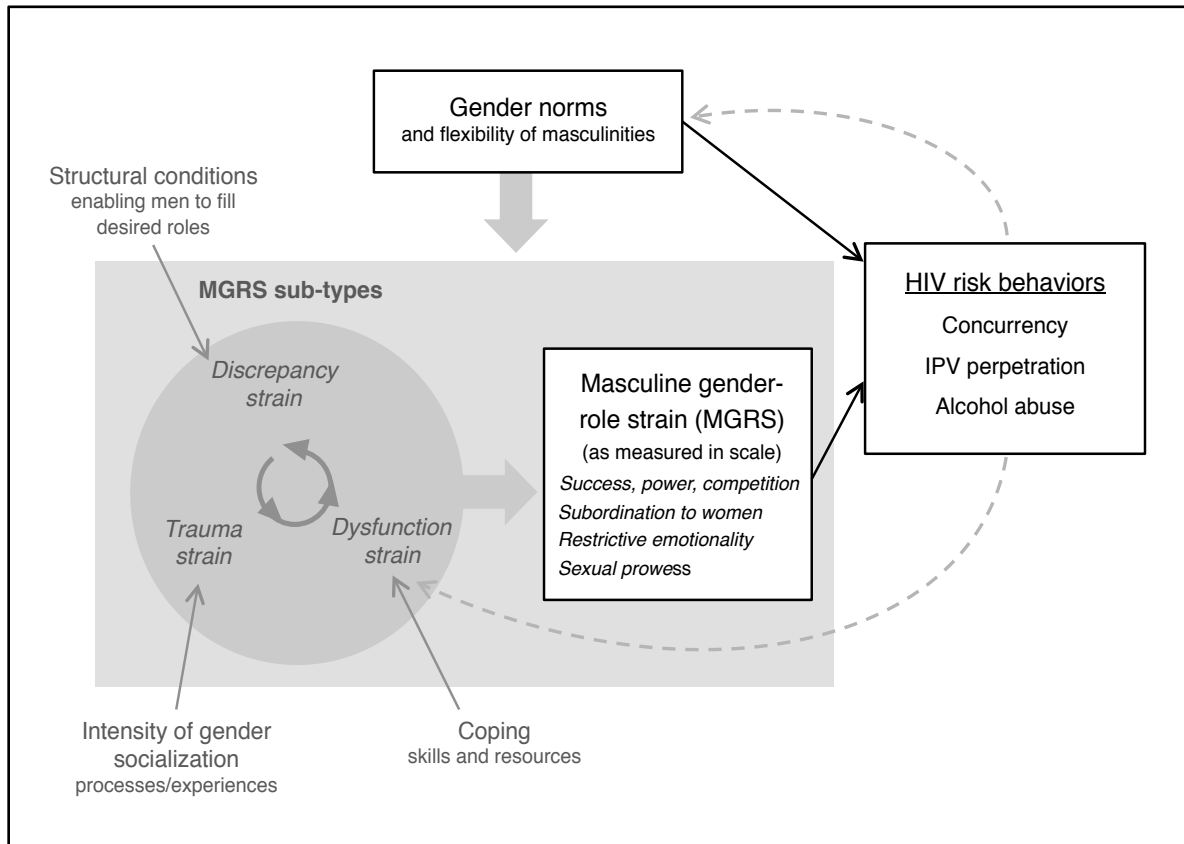
competition with other men was mentioned less frequently than success or power—perhaps because a majority of men face similar challenges finding work in their communities. Related to *Subordination to women*, some men described men's tendency to feel threatened by women having more power than them, particularly in the home, but the workplace was also mentioned. A few men also expressed their belief that a woman should obey her husband and should not work outside the home. Related to *Restrictive emotionality*, many men described and expressed concern about men's tendency to hide their emotions, especially when faced with challenges. Finally, related to *Sexual prowess*, a number of men described putting pressure on themselves and/or experiencing pressure from others to have multiple partners. Importantly, we believe that these four sub-dimensions of MGRS represent the range of experiences of MGRS in this setting (and that other sub-dimensions from the two scales used to create this new scale, which we chose not to include, are indeed less relevant). An overall sense of MGRS also emerged from the qualitative interviews in that most participants expressed a strong sense of anxiety and depression related to trying, and sometimes failing, to live up to expectations of themselves as men.

Using the validated GEMS and GRC/S scales in quantitative regression analyses, we found that both inequitable gender norms and the MGRS-composite were significantly associated with an increased odds of the three HIV risk behaviors. These findings demonstrate the predictive validity of the GEMS and GRC/S scales in that each is significantly associated in the hypothesized direction with outcomes of interest (132). These findings also advance our understanding of three different key HIV risk behaviors in South Africa and sub-Saharan Africa more broadly. The application of MGRS to such behaviors was novel, particularly in the African setting, and the strong associations found suggest this construct should continue to be applied in future research and programming. Our qualitative interviews supported and added more nuance to these main quantitative findings, particularly for the effects of MGRS. Men described how strain from trying, and failing, to live up to the roles they wanted to play led them to turn to more dysfunctional behaviors including having multiple sexual partners, being abusive toward their partners, and “spending too much time drinking.”

Importantly, this was not an unquestioned or invisible process—men clearly articulated these pathways and questioned men’s “abuse of power” regardless of the challenges they face.

Additional quantitative analyses using the four MGRS sub-dimensions allowed us to determine that *Subordination to women* is key to sexual partner concurrency, *Restrictive emotionality* to IPV perpetration, and *Success, power, competition* to alcohol abuse. These more nuanced findings are helpful to future efforts to study or intervene on determinants of particular risk behaviors. For example, our results suggest that interventions to reduce IPV perpetration should include a focus on improving men’s ability to communicate emotional vulnerabilities.

Figure 7.1. Conceptual model of integrated findings from Aims 1–3.



We created a conceptual model (Figure 7.1) as a visual representation of the integrated understanding gained through Aims 1—3 about the relationships between inequitable gender norms, MGRS, and HIV risk behavior among men. The model is also informed by theory and evidence presented in the literature. The black boxes, text, and arrows (in contrast to the grey) represent

variables and relationships that we assessed quantitatively; gender norms and MGRS, as measured in our study, are both shown as influencing the three HIV risk behaviors. The model also depicts in grey how the three sub-types of MGRS influence MGRS as whole, as measured by the GRC/S scale. Gender norms (and flexibility of masculinities) is portrayed as having a broad effect on this system that includes the three sub-types, as well as MGRS as a whole. We have also included in the model the main influence on each sub-type of MGRS. It is important to note that engaging in risk behaviors also cycles back to further increase dysfunction strain as well as further entrenching inequitable gender norms.

To better understand MGRS, we can look to the three theoretical sub-types that together produce the experience of MGRS, as shown in Figure 7.1. In our qualitative study we found that men were experiencing all three sub-types of MGRS. *Discrepancy strain* arose from structural forces of unemployment and related difficulty of marrying and establishing one's own household. The clearest example of this was the 25-year-old man who lived with his parents and described his life situation by saying "for now I don't have my own family." This man lamented the fact that he could not marry his girlfriend and live with her and their child until he paid *lobola*, which he saw as nearly impossible as he was unemployed. Men also clearly described certain characteristics and behaviors of men, including themselves in the past, as causing harm to men themselves, their families and communities—in essence they were describing *dysfunction strain*. Some men also linked discrepancy strain with these harmful behaviors, for example, describing how unemployment-related depression caused men to drink too much or how reluctance to share emotions or seek help for problems led to abuse in the home. There was also some evidence of *trauma strain*, particularly around peer pressure to exert power over women through sex, although trauma strain was less clear from our interviews. In effect, these qualitative findings serve to strengthen our claims from the quantitative findings that the tenets of the Gender Role Strain Paradigm are applicable in Mpumalanga and perhaps South Africa and the region more broadly.

Taken together, our findings suggest that in addition to a cognitive process through which men learn about and adhere to gender norms, to more fully understand and intervene on men's behavior we need to consider the strain they experience from trying to meet expectations of themselves as men. Indeed, without addressing the drivers of MGRS in men's lives, circumstances may persist that impede men from enacting more gender-equitable practices, undermining HIV and violence prevention efforts. Such efforts should be informed by careful research into the particular vulnerabilities men face in a local context.

Study Strengths

This study had both conceptual and methodological strengths. Conceptual strengths included the study's focus on men, its new application and in-depth examination of MGRS, and its examination of a range of HIV risk behaviors. The study's focus on understanding and changing drivers of men's behavior is advantageous because men most often hold power over women in relationships, which affects HIV risk for both. In contrast, past approaches to applying a gender perspective to HIV prevention efforts have been primarily women-centered. According to Dworkin et al. (2011), "Approaches that label women as disempowered and then ask women to take matters into their own hands—despite acknowledged structural inequities between women and men—may fall short of desired health outcomes over the long run" (33, p. 996). Our study was also the first to apply the Gender Role Strain Paradigm, attempt to measure MGRS, and assess its relationship to HIV risk in the African context. We were able to assess the salience and utility of this theory through complementary quantitative and qualitative approaches. Finally, we examined not only sexual risk behavior but also violence perpetration and alcohol abuse, behaviors known to compound risk for sexual transmission of HIV in South Africa and sub-Saharan Africa along with being public health problems in their own right (5, 11, 14, 63, 69).

Methodological strengths of our study included the large representative sample and high response rate, using both exploratory and confirmatory factor analysis methods, using advanced statistical techniques, and using mixed methods to triangulate findings. Our secondary data analysis in

Aims 1 and 2 benefitted from the parent study's access to the Agincourt Health and Demographic Surveillance System infrastructure, which allowed us to generate a large and representative random sample of 581 men and to achieve a high response rate of 94%. For factor analyses for GEMS and the GRC/S scale, this sample size was large enough for us to split it in half to perform both an exploratory and confirmatory factor analysis. Also in factor analyses, we were able to complement commonly used methods with advanced techniques that provided more insight into scale structure and performance. These included parallel analysis to suggest the number of factors to retain and Raykov's rho as an additional measure of reliability to better account for the number of response categories and scale items. In the subsequent regression analyses we also benefitted from using advanced techniques. For example procedures to analyze complex survey data that have recently been improved in SAS v9.3, including PROC SURVEYLOGISTIC, allowed us to appropriately adjust for the cluster sampling design by village, increase representativeness of the sample using sampling weights, and obtain appropriate variance estimates by including women in the data set and using a "domain" statement for gender (SAS Institute Inc., Cary, NC). Finally, using a mixed-methods approach, in which we followed the quantitative analyses and hypotheses tests with a qualitative study that provided a richer perspective grounded in men's own voices, allowed us to triangulate between data sources and gain insight into key findings.

Study Limitations

Despite its strengths, this study also has a number of limitations that should be taken into account. We describe these limitations below, by study aim.

Related to scale adaptation and factor analysis methods under Aim 1, a key limitation was that we did not have enough time to carry out formative research in the study population to inform creation of the GRC/S scale before the survey was implemented. However, as discussed in Chapter 4, we based the scale on previously validated scales, revised it with local members of the study team before survey administration, and confirmed the salience of the construct and scale content in a qualitative follow-up study. An additional limitation related to the GRC/S scale is that while we

attempted to measure the MGRS construct, the scales we combined to create our scale do not purport to do so, as described in Chapters 3 and 4. However, these scales are the closest any have come to measuring MGRS and we believe they do in fact tap into an overarching MGRS construct to a large extent.

A limitation related to the factor analyses was that, as most other researchers have done, when using the GEMS and GRC/S scales in regression analyses we used aggregate scores rather than using latent factors in structural equation modeling or factor scores in regression. Therefore we were not able to appropriately account for measurement error. We chose not to use structural equation modeling with the latent variables because when trying to do so we encountered problems obtaining stable estimates of beta coefficients, likely because of the relative complexity of the models. We chose to use aggregate scores rather than factor scores in regression analyses, which are estimated ‘true scores’ on each latent variable, due to concerns about factor score indeterminacy, in which there are in fact an infinite number of sets of possible factor scores (for a discussion, see 142, 147, 190).

Related to regression analyses under Aim 2, as described in Chapter 5 a key limitation is that we focused our conclusions on findings from regression models in which gender norms and MGRS variables were not included together, that is, that only controlled for demographic covariates. In the combined models (model 4), we found that effects of gender norms and sometimes also MGRS were attenuated. For the combined models for IPV perpetration and alcohol abuse, the pattern in which MGRS remained highly significant but the effect of inequitable gender norms was attenuated could reflect mediation (in which MGRS mediates the relationship between inequitable gender norms and each behavior). In essence, in the combined model, the effect of gender norms would represent the direct effect of gender norms (controlling for MGRS) on behavior (which was non-significant), and the effect of MGRS would represent the “b” path, the effect of MGRS on behavior, controlling for inequitable gender norms (which was highly significant). We felt that testing mediation was premature in our study particularly given the cross-sectional nature of the data and the new application of MGRS in the African context. Because MGRS is theorized as rooted in men’s gender

role socialization, a mediation model may be most appropriate for future analysis. However, the relationship between gender norms and MGRS is also likely to be complex and to vary by behavior. Longitudinal and intervention research is needed to examine this pathway and also look at potential moderators of these linkages. Related to the issue of possible mediation, this study used data from a cross-sectional survey, limiting our ability to determine the causal order of relationships between variables. Finally, it is important to note certain characteristics of our study population that may shape our findings and their generalizability to other populations or settings, particularly that participants were non-migrating men living in a rural, high HIV prevalence setting.

Related to qualitative methods under Aim 3, as noted in Chapter 6, some participants seemed reluctant to show emotional vulnerability and disclose information they may have believed the interviewers would be critical of. For example, possible traumatic gender socialization processes thought to be common in the local setting (for instance, being “punished” as a child or having an absent father) were mentioned but not described as stressful, and others (particularly male initiation rituals) were never mentioned at all despite their clear relevance to the interview topic. In addition, although men talked at length about other men’s harmful behaviors, and some about their own past behavior, no men mentioned engaging in any *current* harmful behavior. The above suggests that some participants may have been omitting important information. The relatively short interviews (45–75 minutes) may have limited interviewers’ ability to build rapport with participants. In addition, although difficult to assess, having female interviewers may have made men more wary to disclose sensitive information and more likely to express more gender-equitable beliefs than they actually held (134).

Implications for Future Research

Based on our findings, several topics merit further research. First, we describe implications for future research on the measurement of gender norms and MGRS, then we turn to research on the impact of these constructs on men’s risk behaviors.

Future Research on the Measurement of Inequitable Gender Norms and MGRS

Continuing research using the GEM scale in our study setting and other locations should further build the evidence base for the utility of this scale in research to understand men's and women's behavior and health outcomes. In our study, the poor performance of items related to violence suggests the need for research to improve the measurement of beliefs about violence against women in South Africa. In addition, a number of items related to sexual relationships also underperformed, and one item of particular interest to concurrency behavior, "A man needs other women even if things with his wife/partner are fine," was dropped. Therefore research is also needed to identify new items related to sexual relationships, particularly the acceptability of men having multiple partners. We are currently testing a number of new GEMS items related to violence and sexual relationships, in addition to a few other domains, in the endline survey for the parent study.

For the GRC/S scale, more research is needed to further determine how, precisely, the scale is related to the MGRS construct and/or its sub-types. Research is also needed to further evaluate how well the scale performs in other settings and circumstances. In particular, such research should seek to confirm the factor structure and assess the scale's ability to predict outcomes of interest and to capture change when targeted through intervention. Cognitive interviewing may help to further evaluate and improve individual GRC/S scale items; in this approach respondents are asked what they understand an item to mean and how they formulated a response to it (191). Researchers may also wish to explore whether additional sub-dimensions are relevant in other settings and populations. For example, researchers could consider the three sub-dimensions that we chose to omit from our scale but that were included in either the Gender Role Conflict or Masculine Gender Role Stress scales (*Restrictive affectionate behavior between men; Conflicts between work and family relations; and Intellectual inferiority*). Finally, researchers evaluating this scale could consider increasing the item inclusion criteria, for example, to loadings of at least 0.4 (we chose to keep all items with significant factor loadings in Mplus) to improve scale parsimony and decrease respondent burden.

Future Research on the Impact of Inequitable Gender Norms and MGRS on Men's Risk Behaviors

We believe that it is advantageous to assess both gender norms and MGRS in research to understand men's HIV risk behaviors and other behaviors of interest because gender norms represents a more cognitive appraisal of gender roles and MGRS more the experience with/emotional response to gender role expectations. In addition, each construct (and scale) incorporates a bit of the other, and therefore if a study measures only gender norms, it wouldn't be possible to know what part is actually MGRS and vice versa. However, as described in the limitations section above, we encountered methodological problems when we attempted to include both of the variables in the combined models for each HIV risk behavior. Research is needed to determine why these problems occurred and what can be done to resolve them. As noted, one likely explanation is mediation, in which MGRS mediates the relationship between gender norms and behavior. Mediation will be most appropriate to assess in longitudinal studies, preferably testing an intervention to change gender norms and MGRS in order to change behavior, and should be supported by process evaluation and qualitative research. In fact, the parent study intervention is explicitly designed to change gender norms and also includes a number of strategies potentially effecting MGRS. Results of the evaluation of this community randomized controlled trial are expected in 2015.

Future directions for research on the impact of MGRS on behaviors of interest are presented in Table 7.1. In sum, as shown in the second column, many broader theoretical questions remain. Research should also assess the extent to which our findings about the effect of MGRS on men's HIV risk behaviors generalize to other geographic locations (within and beyond South Africa), to other populations (e.g., urban; migrating men, men younger or older than 18–35; low HIV prevalence, etc.), and to other behavioral outcomes (e.g., use of health services, including HIV testing and treatment). Research will also be needed to better understand the three sub-types of strain and how they relate to each other. In particular, the theoretical sub-type of trauma strain has been less well-developed than discrepancy strain or dysfunction strain (19, 22). Finally, as shown in the third column of Table 7.1,

research will be needed in local settings to understand sources of each sub-type of strain in order to identify effective strategies to reduce MGRS.

Our qualitative findings suggest that in rural South Africa, cultural and structural forces largely beyond men's control, including unemployment and men's inability to marry and establish their own household, may be key drivers of MGRS. These contextual factors are difficult to study and intervene on and are therefore often rendered less visible than individual-level factors. In particular, more research is needed on potential connections between the "crisis of masculine identity" and the "crisis in marriage as an institution" in the South African and Southern African contexts, as well as implications for HIV vulnerability (159, 179, 180).

Implications for Public Health Practice

The importance and urgency of efforts to reduce HIV vulnerability in South African communities cannot be overstated given continuing high HIV prevalence and incidence and the devastation of HIV on families and communities. Unfortunately, national surveys show that men's HIV risk behaviors also remain prevalent despite prevention efforts, and more and more men are engaging in multiple sexual partnerships (1, 2, 4, 56). Our findings particularly highlight the importance of addressing high levels of sexual partner concurrency (38%) among men in Mpumalanga, which, combined with only about 20% consistent condom use found in the baseline CM survey, creates substantial risk for continued HIV transmission.

Since the beginning of the HIV epidemic in the early 1980s, most behavioral prevention programs have focused on an "ABC" approach (Abstinence, Be faithful, use Condoms) (192). Initially such programs tended to be gender-neutral but soon began to address gender issues as recognition grew that gender inequalities impacted individuals' ability to implement protective ABC behaviors. However most programs designed to address gender inequalities worked only with women, a trend that continues today. Only in the past decade have programs adopted a *gender transformative* approach that directly challenges inequitable gender norms and promotes more equitable norms among both men and women. These programs commonly involve group education

with high levels of participant interaction, critical reflection, and engagement and are sometimes complemented by community-level approaches such as community mobilization or mass media (6).

Table 7.1. Future Directions for Research on MGRS, Overall and By Sub-type

Sub-type of MGRS and definition	Examples of broader theoretical research questions	Examples of research questions for local setting to inform interventions
MGRS as a whole	<ul style="list-style-type: none"> How do the constructs of gender norms and MGRS relate to one another, and how is each related to different HIV risk behaviors? (Mediation of the gender norms-behavior relationship by MGRS? Interactive effect of gender norms and MGRS on behavior?) Is MGRS associated with men's risk behaviors across different populations, cultures and settings? Are the same MGRS sub-dimensions related to the same risk behaviors across different populations (e.g. <i>restrictive emotionality</i> and IPV perpetration)? Is MGRS related to other behaviors of interest related to HIV and other aspects of wellbeing? (For example, HIV testing and treatment uptake?) What are the impacts of community- or population-level changes in MGRS, above and beyond changes at the individual level? How is the GRC/S scale related to the MGRS construct and/or its sub-types? 	<ul style="list-style-type: none"> What factors, beyond gender norms, predict men's MGRS, at the individual, interpersonal and community levels? How does the experience of MGRS differ for urban vs. rural settings? Non-migrating vs. migrating men? Men with more education vs. less education? In communities heavily affected by HIV/AIDS, how does this impact men's MGRS and its 3 sub-types specifically? What larger structural forces may be at work and how can these be addressed or taken into account in research?
Discrepancy strain Strain from trying to meet, and failing to meet, more socially positive masculine expectations	<ul style="list-style-type: none"> Given the predominance of the provider role and difficulty filling it in many settings, can 'providing' be defined more broadly in ways that are acceptable and fulfilling for men? Does experiencing discrepancy strain invariably lead men to turn to more dysfunctional aspects of masculinity? If not, what buffers this effect? 	<ul style="list-style-type: none"> What roles do men want to play in their families and communities? How acceptable are these roles in their communities? What barriers do men face in playing each of these roles? How do men's intimate partners, peers, and older men influence their experience of discrepancy strain (positively and negatively)?
Trauma strain Strain from traumatic and intense gender socialization processes and experiences	<ul style="list-style-type: none"> How does trauma strain relate to the other two sub-types of MGRS? How does experiencing trauma strain impact gender norms across the life course? Under what circumstances might experiencing trauma strain help men adopt more equitable/less restrictive gender norms? 	<ul style="list-style-type: none"> What are local sources of trauma strain across the life course? What effect does experiencing each type of trauma strain have on individuals' beliefs and behavior? Are these sources of strain part of the public discourse in local communities, or are they hidden?
Dysfunction strain Strain from enacting dysfunctional aspects of masculinity	<ul style="list-style-type: none"> How do dysfunctional masculinities compare across different populations and settings? (examples in our study include the 4 sub-dimensions of MGRS) Under what circumstances might experiencing dysfunction strain help men adopt more equitable/less restrictive gender norms? 	<ul style="list-style-type: none"> What are the dysfunctional aspects of masculinity in a local setting? In what ways are they dysfunctional? For example, how are they linked to risk for HIV or violence? To what extent do men and women recognize different kinds of dysfunctional aspects of local masculinities? To what extent are men and women voicing and acting on these concerns publicly?

Gender Transformative Programming

We echo recent calls for more resources to be committed to scale up and maintain gender transformative programs over time in order to achieve the large-scale and sustained reach necessary to change gender norms and power dynamics in communities (6, 155, 193). Such programs are demonstrating promising results worldwide in changing men's attitudes and behavior related to IPV perpetration and sexual risk behavior (6, 34, 84). Less emphasis has been placed on addressing alcohol abuse and we encourage future programming to integrate a focus on this behavior given its clear intersections with HIV and IPV (62, 63, 68), as well as our findings that alcohol abuse is prevalent in our study setting and that men express a strong concern about its negative effects on families and communities.

We can issue a number of other specific recommendations based on our findings. First, we encourage programs to continue to focus on gender equality as a human rights issue, which our qualitative work suggested resonates with many men. We also encourage programs to work with both men and women. In the past, most gender transformative programs have involved either only men or only women; including both men and women in activities as active partners can improve communication, collaboration, and mutual support (33, 84). Programs should also reach young men and women early in life when their beliefs and practices are developing and being reinforced and they are starting to form intimate relationships. In Mpumalanga our qualitative findings suggest that interventions should work to counteract intense peer pressure on young men to have multiple partners and be sexually coercive toward women.

Our qualitative findings also showed that many men are concerned about their peers' behavior but may not be voicing or acting on these concerns publicly. Therefore, programs should provide opportunities for them to do so in order to demonstrate the actual prevalence of more equitable beliefs, help set a public standard that harmful behaviors are unacceptable, and challenge other men to change. Alongside challenging inequitable gender norms, it may be particularly important to promote more flexible norms and masculinities, among both men and women. Men need

a broader range of positive expectations to live up to, particularly given the difficult economic context. They also need to feel welcomed when trying to change, for example, toward becoming more engaged fathers or performing more care work and housework in the home.

Complementary Strategies to Reduce MGRS

Challenging harmful norms and promoting more flexible masculinities among individuals and communities is a start toward reducing MGRS. However, other complementary strategies will likely be needed to reduce MGRS and more fully enable men to avoid or change HIV risk behavior. There are surprisingly few programs in the United States or globally that specifically seek to reduce MGRS, and even fewer that have measured impacts on MGRS or behavior. Therefore, little evidence is currently available about what kinds of strategies would be effective. Indeed, according to O’Neil (2008), who developed the GRC scale and recently reviewed a large body of research using this scale to assess MGRS, “Assessing how to help men resolve GRC in therapy or in preventive interventions should be high-priority areas for future research... What gender role curriculum is effective, under what conditions, with different groups of men, who have different patterns of GRC, with what positive outcomes?” (22, p. 410).

To help identify promising strategies to reduce MGRS, in Chapters 5 and 6 we recommended looking to the Gender Role Strain Paradigm, which suggests that three sub-types of strain give rise to MGRS and in turn men’s harmful behavior. Preventing *discrepancy strain* would involve enabling men to play more socially positive roles they want to play. Given the centrality of providing financially for the family to men in most societies, enabling men to play this role (while also defining the role less rigidly) may be particularly important. For example, programs could more explicitly address structural barriers by offering or advocating for training, employment, or income generation opportunities (e.g., microfinance) for men (166, 167). Preventing *trauma strain* would involve preventing traumatic gender-role socialization processes or experiences, particularly early in life. Preventing *dysfunction strain* would involve preventing men from adhering to more dysfunctional aspects of masculinity, including harmful behavior. Finally, because MGRS and related psychological

strain is likely to persist, coping skills and resources also become important in preventing dysfunctional behavior.

Table 7.2. Implications for Preventing MGRS, By Sub-type

Sub-type of MGRS and definition	Main implication for prevention based on theory	Examples of possible intervention strategies based on our findings and the literature
<i>Discrepancy strain</i> Strain from trying to meet, and failing to meet, more socially positive masculine expectations	Enable men to play the socially positive roles they want to play	<ul style="list-style-type: none"> • Increase income generation and training opportunities • Promote critical reflection on structural forces and their links to male identities • Reduce the zero-sum perspective on power in which when one person gains, another loses (and when women gain men lose) • Normalize a broader range of positive masculinities (e.g. engaged fatherhood), starting early in life • Increase young men's access to positive male role models • Community mobilization/mass media approaches to support and celebrate positive non-traditional masculinities (e.g. care work, engaged fatherhood)
<i>Trauma strain</i> Strain from traumatic and intense gender socialization processes and experiences	Prevent traumatic gender-role socialization processes and experiences, particularly early in life	<ul style="list-style-type: none"> • Prevent child abuse (physical, sexual, psychological) • Prevent young people from witnessing abuse in the home • Change traumatic elements of socialization rituals for young men • Increase opportunities for boys and men to cope with past traumas, including making counseling more available and acceptable • Community mobilization to identify and advocate for ways to reduce trauma strain, including through policy and mass media initiatives
<i>Dysfunction strain</i> Strain from enacting dysfunctional aspects of masculinity	Prevent men from adhering to more dysfunctional aspects of masculinity Help men cope with stress in more adaptive and healthy ways	<ul style="list-style-type: none"> • Directly challenge dysfunctional aspects of masculinity and highlight their harm to men themselves • Implement and enforce policies to disenable dysfunctional behavior (e.g. increasing conviction rate for rape and IPV perpetration) • Provide opportunities and support for engaging with emotional vulnerabilities, starting early in life • Men's groups as safe space to seek advice, critically reflect on men's power and deal with guilt about past behavior • Community mobilization to create a supporting and accepting environment for men who are trying to change

From this starting place, we can begin to identify potential intervention strategies to complement gender-transformative programming, as shown in Table 7.2. The examples of strategies we present in this table were informed by our findings and also integrate a number of relevant recommendations from recent literature about future directions for gender transformative programs (6, 33, 34, 84, 140), although these recommendations were not previously described in terms of reducing MGRS. The strategies chosen must be grounded in an understanding of the most salient sources of discrepancy, trauma and dysfunction strain in a given population, and must be acceptable to that population. In particular, programs must carefully investigate and ensure that any male-centered programming that distributes information, skills, or resources to men does not actually serve

to exacerbate existing power differentials between men and women (29, 33, 34). To do so, involving both men and women as partners in community-based efforts may be key (33).

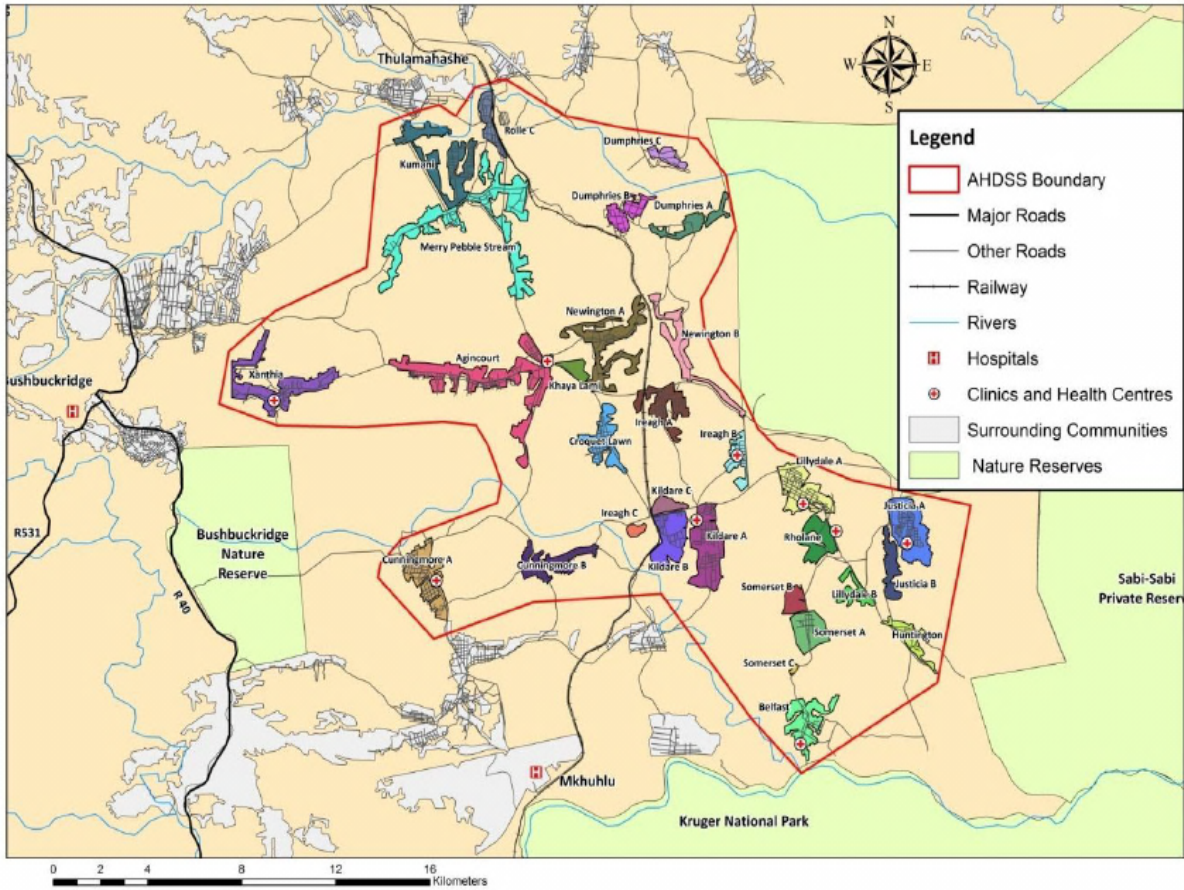
A community mobilization (CM) approach, in which men and women come together in sustained collective efforts toward common goals (34, 114), may hold particular promise in responding to the above recommendations for both changing gender norms and reducing MGRS. First, this approach reaches large groups of individuals and can have a lasting effect on community norms and dynamics (112, 113). Second, the CM approach may have greater potential than individual approaches to address the more structural-level drivers of MGRS—including unemployment and culturally driven practices—through advocacy, collective goal-setting, and mutual support. Third, the CM approach also has the potential to create a supportive environment in which men feel more enabled to change, including encouraging men with more equitable views to make their voices heard publicly and promoting collective critical reflection on the harmful nature of traditional and restrictive masculinities for women and men alike. Finally, this approach can prompt men to engage in much-needed reflection on emotional vulnerabilities, past trauma, and past harmful behavior, including all-too-common perpetration of IPV and rape. To this end, additional individual-level approaches like men's groups may be needed to help men learn how to cope with these stressors in more adaptive ways and build skills to engage with their emotional vulnerabilities.

The parent study for this dissertation study is currently evaluating a two-year CM intervention through a community randomized controlled trial in 22 villages in the study area, results of which are expected in 2015. This data will provide opportunities for analyses of the impact of changes in community-level variables related to mobilization (e.g., critical consciousness, collective activities/actions, and social cohesion), as well as gender norms, MGRS, and a range of HIV risk behaviors at the community and individual levels. In addition, because young women enrolled in the Conditional Cash Transfer (CCT) trial (HPTN 068) in the same study area were tested for HIV, the CM trial will also provide evidence for whether changing a harmful normative context and reducing

MGRS among men at the community level are protective against HIV among young women (over and above completing high school).

Finally, programs and research must simultaneously take into account and work to address the larger societal, structural, and cultural contexts in which individuals' beliefs and strain are imbedded. Gendered power of men over women persists *and must be changed* not only at an individual or interpersonal level but at community, institutional, and societal levels. Structural inequalities beyond individuals' control, including economic inequalities, also affect both men and women and can have a profound effect on masculine identities, self-esteem, and behavior. According to Dworkin et al. (2011), "Despite the positive emphasis on HIV and antiviolence programming with men, the work has not yet intervened on structural disempowerment (globalization, poverty, migration) and has not yet targeted broader drivers of behavior change" (33, p. 999).

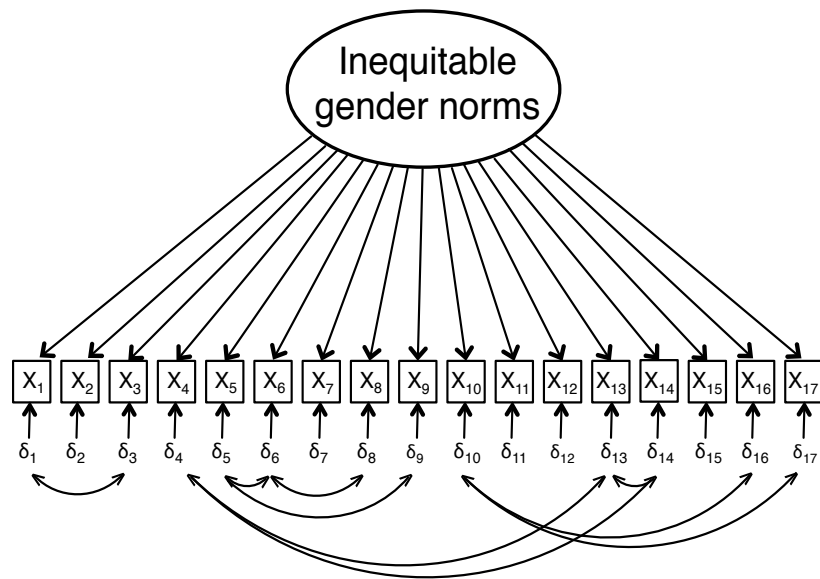
APPENDIX A. Map of the Agincourt Study Site and Surrounding Area, Mpumalanga, South Africa



APPENDIX B. Structural Equation Model Path Diagrams From Confirmatory Factor Analyses for GEMS and GRC/S Scale

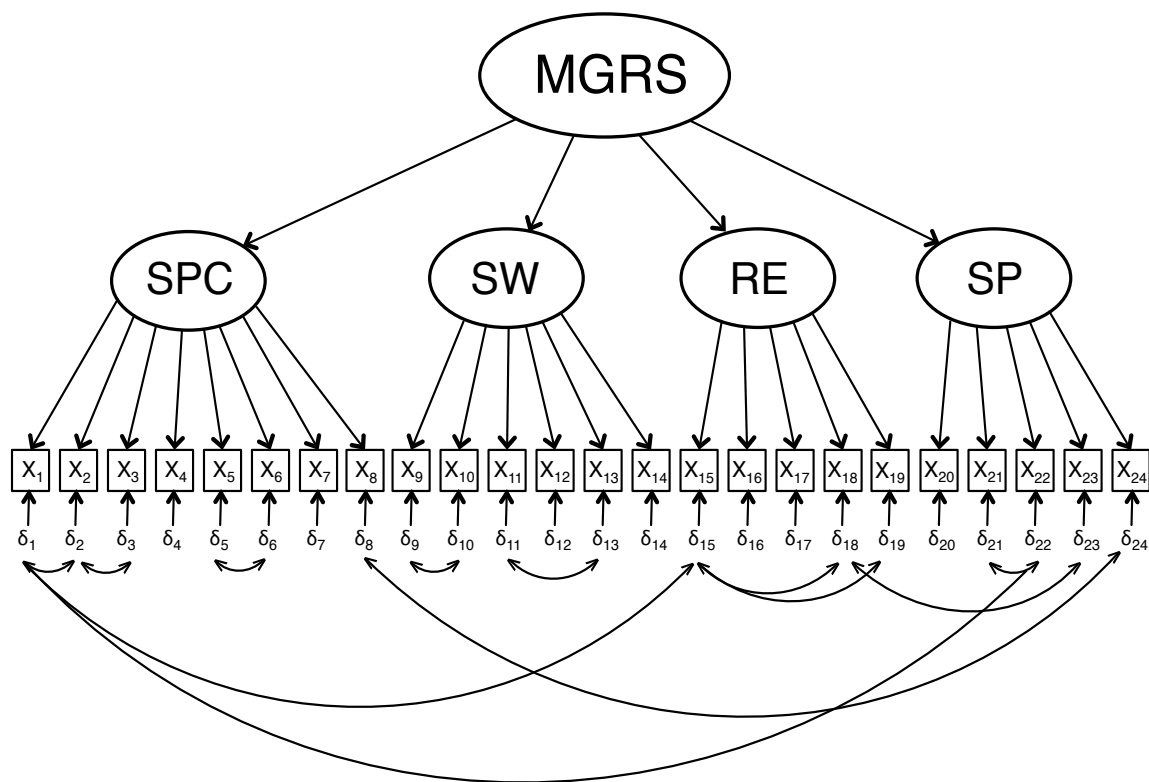
Notes:

- Ovals represent latent (unmeasured) variables; squares represent measured variables (items)
- δ denotes the error term; curved lines represent correlations between error terms



GEMS Item List

- x_1 A woman should tolerate violence to keep her family together.
 x_2 If someone insults a man he should defend his reputation with force if he has to.
 x_3 A man using violence against his wife is a private matter that shouldn't be discussed outside the couple.
 x_4 It is the man who decides what type of sex to have.
 x_5 Men are always ready to have sex.
 x_6 Men need sex more than women do.
 x_7 You don't talk about sex, you just do it.
 x_8 A woman who has sex before she marries does not deserve respect.
 x_9 Women who carry condoms on them are easy.
 x_{10} It is a woman's responsibility to avoid getting pregnant.
 x_{11} Only when a woman has a child is she a real woman.
 x_{12} A real man produces a male child.
 x_{13} Changing diapers, giving a bath, and feeding kids are the mother's responsibility.
 x_{14} A woman's role is taking care of her home and family.
 x_{15} The husband should decide to buy the major household items.
 x_{16} A man should have the final word about decisions in his home.
 x_{17} A woman should obey her husband in all things.



SPC = Success, power, competition
SW = Subordination to women
RE = Restrictive emotionality
SP = Sexual prowess

GRC/S Scale Item List

Success, power, competition

- x₁ I worry about failing and how it affects my doing well as a man.
- x₂ I am often concerned about how others evaluate my ability to provide for my family.
- x₃ I strive to be more successful than others.
- x₄ I sometimes define my personal value by my ability to make money or find work.
- x₅ Feeling that I am in good physical condition is important to me as man.
- x₆ Being physically stronger than other men is important to me.
- x₇ I always strive to win in sports competitions.
- x₈ Having a girlfriend or wife is part of my idea of being a successful man.

Subordination to women

- x₉ Making more money than a woman is a measure of my value and personal worth.
- x₁₀ Being outperformed at work by a woman would make me uncomfortable.
- x₁₁ I would be concerned if my friends knew I live with a woman and did any housework.
- x₁₂ I do not like to let a woman take control of the situation.
- x₁₃ I would be concerned if my friends knew I stayed at home to take care of children while my wife goes to work.
- x₁₄ Having a female boss would be difficult for me.

Restrictive emotionality

- x₁₅ I have difficulty telling others I care about them.
- x₁₆ Talking about my feelings during or after sex is difficult for me.

x₁₇ I often have trouble finding words to describe how I am feeling.

x₁₈ I do not like to show my emotions to other people

x₁₉ Having someone see me cry would be difficult for me.

Sexual prowess

x₂₀ Being able to perform sexually is important to me as a man.

x₂₁ I feel that I always need to be ready for sex with my partner, even if I am tired.

x₂₂ I worry about being unable to become sexually aroused when I want.

x₂₃ It is important to me to know I can drink as much or more than others.

x₂₄ Having sex is part of being a successful man.

APPENDIX C. Qualitative Interview Guide for Individual Interviews With Men in Mpumalanga

PARTICIPANT INFORMATION

Participant ID#: _____

Name of participant: _____

Village: _____

Household #: _____

Name of head of household: _____

Introductory script:

Thank you for taking the time to talk with me today. For this research project, we are trying to learn more about men's lives in Mpumalanga. There are no right or wrong answers to any of my questions; I want to learn your opinions about the topics we discuss today. Please let me know if there are any topics that make you uncomfortable. Do you have any questions before we begin?

Demographic information

I'd like to begin by asking you some basic information about yourself.

In what village do you live in Mpumalanga? _____

Do you live in this village for most of the year? Y N

If not, about how many months of the year do you live in this village? [] months

How old are you? [] years

What is your current marital status? (circle one)

Never married

Married (legal or traditional)

Separated or divorced

Widowed

Who are you currently living with? _____

How many biological children do you have? [] (number)

How many children altogether (biological or other) live with you in your household?

[] (number)

What is the highest level of education you have completed? (circle one)

No school

Some primary

Completed primary

Some high school

Completed high school

University or technikon

Are you currently in school? Y N

Are you currently employed? Y N

Have you earned any income of any kind in the past 3 months? Y N

Opening questions (to get participants talking)

1) What do you usually do on a normal day (morning/afternoon/evening activities, who they were with)?

Probes:

- *For example, what did you do yesterday?*
- *What is a typical day like for your friends?*

Being a man: What it means and what roles are important him

2) I would like to ask you more about men's experiences in Mpumalanga. First, can you tell me what you think it **means to be a man**?

3) What do you think it **means to be a woman**?

For the next part of the interview, we're going to talk about the three most important roles to you in your life. We're going to talk for a while about each one, so I'd like you to think carefully about which to choose.

4) Can you tell me **what 3 roles are most important to you in your life**? These can be roles you've played or currently play, roles you've tried to play but couldn't, or roles you hope to play in the future. Please take your time to think about this. [Give the participant a few minutes before speaking up] *(If the participant is uncertain about what 'role' means, give examples such as husband, partner, provider for the family, protector, head of household, father, son, employee, entrepreneur, student, teacher/mentor, sexual partner, caregiver, community leader (formal or not), community activist, life of the party, sportsman...)*

Roles: 1. _____
2. _____
3. _____

Questions for EACH ROLE

5) First, what does being a good [____] **mean to you**?

Probe only if necessary:

- *What is a good [____] like?*
- *What does a good [____] do?*

6) How did you **learn** about this role while you were growing up?

Probes:

- **Who** did you learn what it means to be a [name role] from? (Why not parent?)
- **How** did this person influence you?

7) **What makes you** a good [____]?

Probes:

- Probe for **stories and examples** (Can you tell me about a time when you felt like a good [____]?)
- What is the **best thing** about being a [____]?

8) What makes you feel you are **not a good** [____]?

Probes:

- Probe for **stories and examples** (Can you tell me about a time when you **didn't** feel like a good [____]?)
- How does this make you feel?

9) What is most **difficult** about trying to be a good [____]?

Probes:

- How has this difficulty **affected you**?
- How have you **dealt with this**?
- Have you done anything people have **criticized** you for?

>>Go through the above questions again, for each of the 3 roles

Concluding questions

10) What are your hopes for the future for men in your community?

Probes:

- What, if anything, do you hope to see change within men themselves (beliefs, knowledge, behavior)?
- What do you hope to see change in Mpumalanga?

11) Is there anything else you would like me to know?

12) I have one final question. Have you heard of the One Man Can campaign?

Probes if yes:

- How did you hear about it? (Friend (from which village)? OMC mobilizer? Participated in an activity?)
- Do you think hearing about One Man Can influenced anything you told me today? How?

Thank you very much!

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