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## Masculinity and HIV: Dimensions of masculine norms that contribute to men's HIV-related sexual behaviors

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### Abstract

Numerous studies have documented a relationship between masculine norms and men's HIV-related sexual behaviors, but intervening upon this relationship requires a nuanced understanding of the specific aspects of masculine norms that shape men's sexual behaviors. We integrate theories on masculinities with empirical HIV research to identify specific dimensions of masculine norms that influence men's HIV-related sexual behaviors. We identify three major dimensions of masculine norms that shape men's sexual behavior: 1) uncontrollable male sex drive, 2) capacity to perform sexually, and 3) power over others. While the existing literature does help explain the relationship between masculine norms and men's sexual behaviors several gaps remain including: a recognition of context-specific masculinities, an interrogation of the positive influences of masculinity, adoption of an intersectional approach, assessment of changes in norms and behaviors over time, and rigorous evaluations of gender-transformative approaches. Addressing these gaps in future research may optimize prevention efforts.

### Keywords

HIV/AIDS; Masculinities; Sex and Gender; Sexualities; Condom

### Introduction

While HIV is caused by a biological pathogen, the primary drivers of the global HIV epidemic are social determinants (1, 2). To achieve the goal of an 'AIDS-free generation,' an improved understanding of the social and cultural factors that amplify or mitigate HIV transmission is critical (3). One key factor, socially constructed gender norms, plays a crucial role in guiding sexual behaviors and consequent vulnerability to HIV (4, 5). Gender norms, in particular norms of masculinity, are believed to have a profound effect on the HIV epidemic (5–7).

Numerous studies have documented the relationship between norms of masculinity and HIV-related sexual behaviors in settings across the globe (8–27). These studies use a variety of measures (e.g. Male Role Attitudes Scale (8), Hypermasculinity Index (14), Gender Equitable Men Scale (19)) to assess men’s endorsement of masculine norms supporting separate roles for men and women, anti-femininity, toughness, or hypersexuality. This research shows that men’s endorsement of these masculine norms is significantly associated with HIV-related behaviors like non-condom use and having a greater number of sexual partners, but it fails to explicate specifically which aspects of these norms lead men to engage in sexual behaviors that put themselves and their sexual partners at risk for HIV. Given the substantial interest in incorporating norms of masculinity into HIV prevention interventions (28–32), identifying the specific dimensions of masculine norms that explain this relationship will help interventionists apply theoretical conceptualizations of masculinity to HIV-prevention programs targeting heterosexual men’s HIV-related sexual behaviors.

In this paper, we aim to integrate theories on masculinities with empirical HIV research to identify specific dimensions of masculine norms that influence men’s HIV-related sexual behaviors. To synthesize theoretical and empirical perspectives, we reviewed books, relevant empirical literature found in social science and public health databases, searched secondary reference lists, and contacted relevant scholars to examine the body of literature on masculinity and men’s HIV-related sexual behaviors. Because of our inclusion of theoretical perspectives – many of which are published in books – and the breadth of this topic, we consider this to be a critical non-systematic synthesis of the literature that allows for identification of important dimensions of masculine norms and may be valuable in developing more tailored HIV prevention strategies. We begin by discussing current perspectives on gender, masculinity and men’s behaviors. Then, we describe the dimensions of masculine norms that influence men’s sexual behaviors that we identified in the theoretical and empirical literature. Finally, we make recommendations for future directions of HIV research and prevention programs targeted towards men.

### **Gender, Masculinity, and men’s health behaviors**

Among gender scholars and socio-behavioral HIV researchers, gender is most commonly understood within a social constructivist framework and is defined as “those qualities of femaleness and maleness that develop as a result of socialization rather than biological predisposition.” (p. 146) (33). This view posits that in contrast to the biological nature of *sex*, gender is not an inherent individual trait, but rather is constructed through social interactions (34, 35). Gender is understood not as something that an individual *is*, but rather something that individuals *do* (34). This perspective focuses on the actions of individuals, and importantly, the institutions and social environments that ascribe meaning to those actions. Butler posits that individuals construct their gender through their repeated actions, behaviors, and interactions, referred to as performativity (36). Thus, a man’s masculinity depends on both his public behaviors and interactions as well as how his social environment judges them. These patterns of behavior become embedded into culture, institutions, and policies and thus create a social structure that is a powerful force in people’s lives. As a result of this social structure, men’s “competence” in society depends, in large part, on their

ability to fit into behavioral norms for their gender (34). It should also be noted that masculinity is just one of men's identities and the behavioral norms of other identities (e.g. African-American, professor, liberal, or working-class) interact with societal norms of masculinity; the intersection of these identities result in a multitude of variations on gender norms and masculine ideals depending on the specific context or setting (37, 38).

Theoretical understandings of masculinity developed in the past two decades emphasize power hierarchies between men whereby there are multiple masculinities with unequal distributions of power between them (39, 40). As Connell & Messerschmidt write, "masculinity represents not a certain type of man but, rather, a way that men position themselves." (p. 841) (38). This positioning that results from the existence of this power hierarchy is extremely important to men's behaviors (34, 36, 41). Men who do not meet certain masculine ideals based on their specific social context can incur social disapproval, social ostracism (42), and/or violence (43, 44) from their social networks. As men weigh their decisions (consciously or subconsciously), their position in this power structure - and their desire to maintain position or advance - will typically play a role in how they behave in social situations. Since gender is constructed and performed, the relationship between men's behaviors and the constructions of masculine gender are bidirectional and have implications for men's health and the health of their partners, peers and others in their social networks.

Behaviors that men use to position themselves within the masculine hierarchy are linked to health outcomes, including HIV (41, 45). Characteristics of virility and strength are commonly ascribed to masculinity and can be required in certain contexts to achieve masculine status. While there are a variety of behaviors men can use to demonstrate virility and strength, men sometimes use their sexual activity, capacity for drinking, or shows of force to demonstrate these masculine characteristics for their peers (41, 46). In this way, some men's behaviors, including behaviors known to be risk factors for HIV, may help them construct an outward image aligned with the dominant ideal masculinity but can negatively affect their health.

Poor, minority, or otherwise marginalized men may disproportionately pay the costs of masculine norms in terms of the impact on their health (47–49). Men's other identities (e.g. class, ethnicity, race, age, sexual orientation) shape the way that they experience gender norms (50). Some masculine characteristics, such as providing for one's family, can be difficult to achieve for men who are marginalized and denied equitable access to employment, institutions, and power available to other males (41, 51). Without access to these power structures, these men have few options for fulfilling societies' expectations for men. For men with low or marginalized social status, their most viable option to demonstrate masculine characteristics may be to perform behaviors that put them at-risk for diseases, injury, or bodily harm (e.g. violence, sexual behaviors). Additionally, these men can sometimes find their perceived lack of power frustrating and may adopt harmful coping strategies (e.g. substance abuse) or behaviors that gives them a sense of power over others (e.g. sexual aggressiveness or violence perpetration) (41, 52–54).

Since power over others is such a critical element in the dominant formulation of masculinity, men may seek to emphasize their power in relationships with women. The

Theory of Gender and Power, developed by Connell (39) and applied to HIV by Wingood and DiClemente (55), provides a framework for how gender and power is negotiated between the sexes. Connell identifies three social structures that characterize the gendered relationships between men and women (39), and, as applied to HIV prevention, these three structures shape the gender dynamics and HIV risk-behaviors within romantic and sexual relationships (55). The first two structures described by Connell, the sexual division of labor and the sexual division of power, both establish norms where men typically hold economic and decision-making power within heterosexual relationships. Men in relationships without this power advantage can be seen as emasculated and thus may strive to assert their power in other ways, including sexual behaviors. The third structure, the structure of cathexis (i.e. social norms and affective attachments) imposes differential norms of sexual behavior for men and women and increases vulnerability of both as their sexual behaviors are constrained by social norms (56). These socio-structural contexts of heterosexual relationships create power dynamics that facilitate men's use of sexual behaviors as a strategy to demonstrate their masculinity.

### **Evolving sexual and masculine norms**

As discussed in the previous sections, masculinity is a powerful force in the lives of men. It is important to note that norms of masculinity, as well as norms of sexual behaviors, are not static, but dynamic and evolving constructs that vary by social context. Norms are derived from patterns of behaviors and shifts in behaviors can produce new gender norms and sexual norms. For example, with the advent of HIV and increased condom promotional activities, condom use has become more normative than in the pre-HIV era - as evidenced by increased condom use across most settings (57–59). Gender norms for women have changed markedly over the past century in many parts of the world attributable, in large part, to the worldwide movement for women's rights and gender equality (60). While a similar radical transformation of gender norms has not yet occurred for men in most settings, there is emerging evidence that men's attitudes and practices have changed relative to previous generations. For example, data from a multi-country study has shown that younger men are more supportive of gender equality and more likely to engage in household tasks than the previous generation (61). And yet, despite these shifting norms, there are some characteristics of manhood that are more recalcitrant to change. For example, being strong-willed, physically strong, virile, and a provider are still characteristics expected of men in most settings (35, 62–65). Thus, despite constantly shifting norms, it is important to consider the evidence for how those more durable components of masculinity are shaping men's sexual behaviors and, as a consequence, men and women's HIV vulnerability.

### **Masculine norms and men's HIV-related sexual behaviors**

As described in the foundational work of Gagnon and Simon (66), sexual behaviors are embedded within the system of social practices and are rarely motivated by solely biologically-driven sexual desires. Men's sexual behaviors are theorized as playing an integral part of constructing their masculine identity. Furthermore, men's HIV vulnerability – and the vulnerability of their sexual partners – is primarily associated with those sexual behaviors. As Jewkes and Morrell noted in their article on HIV and masculinity, “Understanding sexual practices as flowing from gender identities helps us to understand

why they are so hard to change, as well as how change should be approached.” (p. 9) (32). Thus, in this section, we connect the theoretical literature detailed above with the empirical literature to identify specific dimensions of masculine norms represented in the literature that motivate men’s HIV-related sexual behaviors.

### **Dimensions of masculine norms that motivate men’s sexual behaviors**

We identified three major dimensions of masculine norms that shape men’s sexual behaviors: 1) the uncontrollable male sex drive, 2) capacity to perform sexually, and 3) power over others. Each of these three dimensions is a key normative characteristic of masculinity in most societies, though there may be variation of their importance across social contexts (35, 41, 62). Below, we describe the theoretical basis of these three dimensions and the research findings that highlight their role in men’s sexual behaviors.

**Uncontrollable male sex drive**—The uncontrollable male sex drive refers to the dimension of masculinity that values men who have a voracious sexual appetite (35, 67). As masculinity is constructed through discourse and interactions, the discourse surrounding the ‘male sexual drive’ propagates the idea that men are biologically programmed to constantly and relentlessly desire sex (68, 69). The ‘male sexual drive’ has its roots in historical notions that men need to ‘spread their seed’ and are ‘hardwired’ to have unprotected sex with multiple women partners to reproduce many offspring (62, 70, 71). While these biological explanations have largely been discredited (59, 72), the concept of men’s sexuality being biologically hardwired remains pervasive in popular culture and discourse (73).

Because of this perceived sex drive, some men describe themselves as acting on instincts which did not allow them to abstain or to use condoms during sexual intercourse. In a study of men in Curacao, Stutterheim et al. describe their research participants’ perceptions of male sexuality:

“They likened themselves or other men to wild animals (i.e., dogs and lions) who are compelled to ‘hunt’ or ‘conquer’ women and who are not rational but, rather, impulsive. Because of this, participants frequently claimed that, in ‘the heat of the moment’, they do not think of using a condom: ‘At that moment, you have other priorities. Sensibility disappears and you don’t think about the consequences of your actions.’” (74)(p. 422–423)

This discourse connects maleness with insatiable sexual desire for women and, thus, a *real man* in this context is impulsive and irrational.

Various qualitative studies have found that some men believe that having multiple women sexual partners is ‘natural’ (75–79) and sometimes forgo using condoms in situations when they do not have a condom and think they are physically incapable of abstaining from sex (78, 80–84). In contexts where this discourse is prominent, the idea that the male sex drive is uncontrollable creates a powerful frame for men’s sexual behaviors and can inhibit their ability or interest to adopt protective behaviors (i.e. condom use).

**Capacity to perform sexually**—Connell writes that the dominant form of masculinity is heterosexual and sexually active (35). In one analysis of gender in Southern Africa,

McFadden (85) writes: “Heterosexual sex is essential in the realization of maleness, in the social mobility of the male from boy to man, to father, to head of household, to decision-maker, to man” (p. 183). While the strength of this idea may vary across specific contexts, it exists nearly universally across settings (62). Thus, being able to perform sexually (e.g. maintaining an erection, being skillful) can play an important role in achieving masculine status, especially among men who are unable to achieve masculine status through their other behaviors. Being unable or unwilling to perform sexually with a woman could make a man suspect of belonging to the ‘other’ type of sexualities (e.g. homosexual, asexual) that would preclude him from achieving the dominant ideal (67, 86, 87). This may encourage men in some settings to have a higher number of female sexual partners since research in various cultural contexts has shown that men who abstain from sex or refuse sex with a particular woman are subject to teasing that challenges their masculine status (79, 81, 88–90).

Condoms represent a potential disruption to a man’s ability to perform sexually and thus are a potential barrier for some men to demonstrate sexual capacity and achieve the masculine norm. Quantitative studies by Pleck et al. (8) and Noar & Morokoff (13) among young men in the United States found that the relationship between masculine ideology and condom use was mediated by a belief that condoms interfere with the pleasure of sex. Additionally, Marin found that among unmarried Latino men in the U.S. condom use self-efficacy helped explain the relationship between masculine ideology and men’s condom use (9). In a qualitative study with Australian youth (82), men’s fear of not being able to perform sexually with a condom is evident in one woman’s description of a sexual episode with a partner:

“I put a condom on him and he just lost it [erection] and then insisted we try without a condom ‘cos that was the trouble but we tried again and he lost it [erection] and he blamed the condom and told me not to tell anyone about it.” (p. 396)

In this case, the young man blamed his inability to maintain an erection on the use of a condom. Additionally, the male partner clearly was worried about the potential negative social consequences of not being able to achieve an erection. Other qualitative studies echo these findings about fear of being unable to maintain an erection and that some men avoid using condom because they are concerned about the social consequence of their inability to sustain an erection (91–96). Findings related to men’s capacity to perform sexually were found across a range of men (adolescents and adults, poor and middle class, from high- and low-income countries), though this concept seemed to be particularly salient in research with youth/adolescents. Condom use may be impeded by men’s desire to demonstrate their competence during sexual intercourse.

**Power over others**—The dimension of power refers to men’s efforts to assert their power over other men and over women through their sexual behaviors, especially their number of women partners. As Flood (65) writes: “Sexual activity is a key path to masculine status, and other men are the audience, always imagined and sometimes real, for one’s sexual activities.” (p. 339). Sexual activities typically occur in private (though group sex (97) and gang rape are notable exceptions (98–100)), but men are often happy to have their peers hear

about their experiences to build their sexual reputation among male peers (101, 102). Importantly, because sexual relationships are often constructed as a man's conquest of a woman, having *multiple women* partners implies a level of sexual prowess and control over women. Both of these are signifiers of masculinity and therefore can also increase a man's status and power over other men.

Diverse research across the globe speaks to men's use of sexual partners as a strategy to gain status among other men. Two separate qualitative studies of Ugandan men found that men's status among peers depended on having multiple women sexual partners (64, 103). Other studies echo this idea that more women sexual partners usually signifies greater social standing (74, 79, 90, 102, 104–109). Ethnographic research with both Australian military men and working-class British youth found that men shared with peers only masculine-promoting details of their sexual experiences with women (or lied about them) to maximize status gains (65, 89). Tanzanian truck drivers engaged in risky sex because of fear that refusing to do so would cause peers to question their masculinity and tease them (110). Similarly, in a study of young men in Paraguay, men lied to peers about their abstinence with girlfriends to avoid ridicule or teasing that challenged their masculinity (88). These studies demonstrate that men from a range of settings are both socially rewarded for engagement in sexual relationships with multiple women partners and they fear social punishment for not having sexual relationships. While these examples rely on men sharing stories about their sexual experiences, there is evidence that some men engage in gang/group rape to demonstrate their masculinity to other men (100, 111–114). These gang/group rapes often occurs within the context of peer pressure encouraging young men to prove their heterosexuality and dominance over women (114). Though these studies do not represent all men or all settings, the research suggests that in many contexts engaging in sexual relationships with (multiple) women partners is a strategy that men can deploy to establish oneself in the social hierarchy and gain power status and power over other men.

Evidence shows that men also use their sexual relationships to gain power over women. Subordination of women is a prominent construct in conceptualizations of masculinity (39, 115). There is a double standard in most societies for sexual behaviors where men's (hetero)sexuality is celebrated and women's is restricted (32, 77, 101, 116, 117). As a result, in many contexts, heterosexual sex by unmarried individuals tends to increase a man's status and decrease a woman's status. Men who are complicit to this power dynamic, and who participate in rewarding men and criticizing women, are helping to establish men's power over women. Heterosexual sex acts by unmarried men have the potential to increase their status but decrease an unmarried woman's status, thus propagating men's increased status over women.

Feminist scholars have posited that men use sexual aggression and rape as a tactic to dominate and control women (118, 119). Additionally, the Confluence Model of Sexual Aggression, developed by Malamuth et al. (120), has demonstrated that men who are sexually aggressive derive gratification from controlling or dominating women. Jewkes and colleagues has shown that men use rape as a form of social control over women (113, 121, 122). In a population-based sample of men in the Eastern Cape and KwaZulu-Natal, Jewkes et al. (122) found that control and punishment of women was one of the most common

reasons given for rape. In another study of South African men, one young man said, “My friend was not in love with her anymore, because of her promiscuity. He called us during the day and told us at night we must streamline [gang rape] her” (p. 2955) (113). Additionally, in a multi-country study of men in Asian countries, 38% of men who had perpetrated rape said they did it because they were angry with the woman or wanted to punish her (123). These highlight more explicit examples of men who are using sex to demonstrate their control and power over women.

While rape and sexual aggression are the most extreme examples of men using sex to gain power over women, other studies have shown that men use their everyday sexual relations to establish power over women (95, 102, 104, 124). The Brown et al. (104) study in Namibia provides an example: “Men and boys strongly believe we are superior to women and girls and that we can show it in the sexual act.” (p. 591). This idea that men can demonstrate their superiority during sex may reflect the globally pervasive social construction of sex as men assertively penetrating the passive female (36, 125) or sex as men conquering women (126, 127). A study by Ragnarrson et al. (116) in a peri-urban community in Cape Town, South Africa found that young men who had multiple sexual partners had an extreme version of this assertive/passive conceptualization of sex: “It is because of our different sexual orientation where guys deposit and ladies receive. Because this, [the vagina] looks like a rubbish can where we throw everything in it” (p. 4). These men felt that women had too much agency in relationships and reacted by having multiple partners to prevent women from having too much power (116). By taking on multiple partners and degrading them, these men were able to assert their power over women.

Evidence supporting the concept of men using their sexual behaviors to gain power over men and women seemed to cross age ranges, countries, and race/ethnicities. Evidence for some of the more extreme forms of men expressing their power over women were only found in settings that tend to have more traditional gender norms that emphasize women’s subordination to men. Nonetheless, using multiple female partners to gain status and power was commonly described.

### **Can condom use, monogamy or abstinence be masculine?**

Despite the evidence described above showing that some norms of masculinity contribute to HIV risk behaviors, there is potential that norms of masculinity may also play a role in increasing men’s condom use and reducing their number of women sexual partners. While some interventions have tried to leverage norms of masculinity to promote healthy sexual behaviors (28), the empirical evidence describing dimensions of masculine norms that promote HIV-protective behaviors is still quite limited but provides potentially important insights for future research and practice.

Certain dimensions of masculine norms may discourage having multiple women sexual partners. In Grund and Hennink’s (128) study of men who had been circumcised in Swaziland, one man refers to the respectability of men who do not have extramarital affairs:

“Getting married changed me because I have a wife. My wife wouldn’t like it when I go around having sex with all the women because they are also people’s wives.



It's not a good thing in the community as a husband you sleep with other men's wives. That is not good manhood." (p. 248)

For this man, 'good manhood' requires a man to respect his own wife and other men's wives. Several other studies also found this 'respectability' dimension of masculine norms that discourages multiple sex partners (88, 106, 107). These studies suggest that there is a discourse of masculinity that emphasizes that for married men to be in good social standing, they should avoid extramarital sex. Another study conducted with South African military men found that officers sometimes avoided sexual relationships to demonstrate responsibility and self-control to their military subordinates (129). Responsibility and self-control are both characteristics of masculinity and serve as a strategy to exert his power over subordinates to demonstrate their superiority to the lower military classes. These two examples suggest that some men may perform their masculinity by *avoiding* taking on new sex partners. Age and/or life stage may be a factor for both of these examples since they reflect the opinions of a married man and a senior official. It is possible that different dimensions of masculinity may be developmentally congruent and more salient at different life stages (e.g. virility is most important in youth and being a provider is more important in later adulthood).

Despite the plausibility, we found scant evidence that men use condoms to demonstrate their masculine role as 'protector.' However, considering that pro-condom norms have increased over time (57, 58), male gender norms may be evolving as well to incorporate condom use as a demonstration of masculinity. For example, men in the Dominican Republic told friends that they used condoms with sex workers when they actually had not as a strategy to avoid criticism from their male peers who considered condom use the expected norm (130). Evidence also suggests that condom use may be considered masculine because it is a signifier of having multiple women sexual partners. Mankayi et al. found that South African military men brag about having condoms (131). One man comments: "You know, the more condoms I've got in my drawer, the more manly I am." (p. 36), portraying the idea that condoms represent sexual activity, an important characteristic of masculinity. A study in Australia found that in response to viewing an image of a man having a condom in his wallet, young men had positive perceptions of the man because the image suggested the man had casual sex (132). In contrast, female peers in the same study had negative perceptions of the man because they perceived him as degrading women by having casual sex. In this case, condoms were a sign of having casual partners which conveyed the man's sexual prowess.

Finally, demonstrating the complexity of this issue, in a survey of college students in the U.S., men rated both 'using a condom' and 'avoiding using a condom' as 'masculine' (133). Notably, these researchers found that *how* a man either used or avoided condoms was most important to whether it was masculine. For example, if a man used 'seduction' or 'deception' to either use *or* avoid condoms, it was considered masculine (133). Based on these studies, it seems that the social meaning of condoms and condom use is complex and depends on factors that vary by context.

## Discussion

We synthesized the theoretical and empirical literature and identified three dimensions of masculine norms that shape men's engagement in HIV-related sexual behaviors: the uncontrollable male sex drive, capacity to perform sexually, and power over others. There are, however, several limitations to this evidence, and we make the following five recommendations for future research in this area.

First, reviewing the research in this area highlights that there are characteristics of masculinity that are seemingly universal across settings (e.g. power over others) but also elements that are dependent on the specific socio-cultural context (38, 134). Not using condoms and having multiple partners can emphasize masculinity in some settings/contexts and condom use and abstaining from sex can emphasize masculinity in others. Thus, our findings related to the uncontrollable male sex drive, capacity to perform sexually, and power over others should be seen as a jumping off point for understanding masculinities and HIV, and should not be interpreted to be broadly generalizable. In addition to highlighting the importance of considering socio-cultural contexts, our review also emphasizes that masculinity is earned or lost not just through men's behaviors but through the social dynamics and interactions that interpret and place value upon those behaviors (34, 36). HIV researchers have tended to focus on men's sexual behaviors because of its direct relationship with HIV infection. However, to understand the relationship between masculinity and men's HIV-related sexual behaviors, future research needs to more fully examine the social dynamics involved in from the interrelationship between norms of masculinity and behaviors with context-specific meanings.

Given that men of different ages, races, classes and ethnicities experience masculinity and masculine norms differently (50), more comparative research is needed to better understand whether the dimensions of masculine norms that influence men's sexual behaviors vary across these different identities. Studies of masculinity and HIV often include marginalized men and highlight their "hypermasculine" behaviors that put them at risk for HIV. Research by Gibbs, Sikweyiya and Jewkes in South Africa highlight that younger men adopt a more violent and sexual masculinity because, unlike older men, they are unable to meet the provider role (102). Similarly, Jewkes and Morrell highlight that due to historical segregation, South Africa has "distinctive gendered ideals for black and white men and women" (p. 4) (32). But, men who are marginalized at a societal level (e.g. young men or ethnic-minority men) may be dominant in another context (e.g. small peer group, local villages). Consideration of how individual men inhabit various different identities and power dynamics (e.g. men who are powerful in some contexts but powerless in others) will help move research beyond labelling individual men as belonging to a certain type of masculinity (135). Additionally, while the research we found had a wide range of men from various classes, cultures, and races, there were rarely comparisons between groups. An intersectional perspective recognizes the multiple identities that individuals have and how each one intersects to shape the experiences of an individual (47, 48). Ultimately, there needs to be further exploration of how these relationships may work for men who represent the dominant form of masculinity in comparison to those men who do not occupy a dominant position. Incorporating other dimensions of power and status (i.e. race, class, sexual

orientation, age) into studies of masculinity will result in a less monolithic view of the ways in which masculine norms influence men's behaviors. Comparing different populations within the same country, or comparing between different countries, will help to better understand the nuances of this relationship and develop more appropriate responses for specific populations of men.

Third, future research needs to explore which dimensions of masculine norms may be encouraging men to use condoms, abstain from sex, or limit the number of sexual partners. We found some evidence that men may demonstrate their masculinity by using condoms or abstaining from extramarital relationships. This dynamic needs further exploration so that interventionists can have a fuller understanding of men's motivations for engaging in both risk and protective sexual behaviors.

Fourth, different study designs are necessary to explore these dynamics in greater depth. For example, studying these dynamics longitudinally could help assess temporality between sexual behaviors and masculine norms. All of the studies we referred to were cross-sectional and do not allow for assessing the temporality of this relationship or establishing causality. Without longitudinal studies, we are also unable to determine how men's attitudes and behaviors, and the relationship between them, vary over the life course. Given the empirical and theoretical evidence that masculine norms are likely playing a substantial role in men's sexual behaviors, longitudinal studies can move this field of research forward by determining the extent to which the relationship exists as hypothesized in the literature.

Finally, resources are needed to rigorously evaluate programs that target men's gender ideology and masculine norms with the aim of reducing sexual risk behaviors. Public health interventions that have included components that aim to transform men's gender ideology (e.g. 'gender-transformative interventions') have been shown to reduce men's sexual risk behaviors (29). A recent systematic review showed that there have only been eleven published evaluations of interventions that include a gender-transformative component to change men's sexual behaviors (29) and only one used a randomized control trial design (136). It is important for HIV researchers and interventionists to rigorously assess whether modifying men's gender ideology or transforming masculine norms will result in long-term changes in men's sexual behaviors that confer mutual protection from HIV. This research would not only help improve our understanding of the relationship between masculine norms and sexual behaviors, but also improve our ability to intervene with effective evidence-based interventions.

## Limitations

While our synthesis of the theoretical and empirical literature highlights important dimensions of masculine norms that are central to men's sexual behaviors, there are a few important limitations to acknowledge. First, our synthesis of the literature did not follow protocols of a systematic review (137). While we consider review to adequately assess the state of the empirical literature, it is possible that some articles were overlooked. Second, we limited our theoretical and empirical synthesis to heterosexual men but masculinity also influences gay/bisexual-identifying men or men who have sex with men. For a recent review on the role of masculinity in the sexual behaviors of men who have sex with men, see Zeglin

et al. (138). Third, our identification of three dimensions of masculine norms implies that there might be some broad applicability of findings and mechanisms across settings and cultures. While we do contend that many of these dimensions seem to function similarly across settings, there is nuance and variations between groups of men and different cultural settings so care should be taken before applying any of these findings to a specific group of men. Additionally, there are likely to be other dimensions that have yet to be explored in theoretical or empirical research and were not identified in this paper.

## Conclusions

Our synthesis of literature on dimensions of masculine norms that contribute to men's HIV-related sexual behaviors highlights specific aspects of masculinity that contribute to risk for sexual transmission of HIV. To create more effective HIV prevention programs for men, HIV researchers and interventionists need to broaden their efforts examining the complex relationships between masculine norms and men's HIV-related behaviors. By applying theoretical understandings of masculinity and building upon the empirical knowledge base, we may be able to develop new and innovative prevention interventions for men that can be integrated in a sustained manner in diverse cultures and societies.

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