Development and Validation of the Masculine Attributes Questionnaire

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Abstract

The present study describes the development and validation of the Masculine Attributes Questionnaire (MAQ). The purpose of this study was to develop a theoretically and empirically grounded measure of masculine attributes for sexual health research with African American young men. Consistent with Whitehead's theory, the MAQ items were hypothesized to comprise two components representing reputation-based and respect-based attributes. The sample included 505 African American men aged 19 to 22 years (*M* = 20.29, *SD* = 1.10) living in resource-poor communities in the rural South. Convergent and discriminant validity of the MAQ were assessed by examining the associations of masculinity attributes with psychosocial factors. Criterion validity was assessed by examining the extent to which the MAQ subscales predicted sexual risk behavior outcomes. Consistent with study hypotheses, the MAQ was composed of (a) reputation-based attributes oriented toward sexual prowess, toughness, and authority-defying behavior and (b) respect-based attributes oriented toward economic independence, socially approved levels of hard work and education, and committed romantic relationships. Reputation-based attributes were associated positively with street code and negatively related to academic orientation, vocational engagement, and self-regulation, whereas respect-based attributes were associated positively with academic and vocational orientations and self-regulation. Finally, reputation-based attributes predicted sexual risk behaviors including concurrent sexual partnerships, multiple sexual partners, marijuana use, and incarceration, net of the influence of respect-based attributes. The development of the MAQ provides a new measure that permits systematic quantitative investigation of the associations between African American men's masculinity ideology and sexual risk behavior.

Introduction

Sexually transmitted infections (STIs)–related racial disparities are well documented (Centers for Disease Control and Prevention, 2012). African American heterosexual men, however, are an understudied group who evince high rates of STIs. Importantly, heterosexual transmission of HIV is facilitated by non-HIV STIs, both inflammatory and ulcerative, which increase HIV infectivity and susceptibility in both women and men (DiClemente, 2000). Thus, risk conferred by non-HIV STIs acquired in heterosexual relationships affects the spread of HIV in a community and highlights the importance of investigating African American heterosexual men's sexual risk behavior. Sexual risk behaviors, particularly those associated with inconsistent condom use and engaging in concurrent sexual partnerships (more than one partner overlapping in

time) have been identified as important drivers of STIs rates as well as involvement with substance use (Adimora, Schoenbach, Doherty, 2007). Given the HIV-related consequences and other health implications of STIs acquisition for these young men and their female partners, understanding the factors that contribute to heterosexual African American young men's sexual risk behaviors is crucial to prevention and intervention.

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A factor often in the health promotion literature on African American men's sexual risk behaviors and exposure to related risk factors such as drug use involves *masculinity ideology* (Kogan et al., 2016). Masculinity ideology refers to the internalization of culturally defined standards or norms for males' roles and behaviors (Levant, 1996; Pleck, Sonenstein, & Ku, 1993). Masculinity ideology encourages and constrains boys and men to conform to gender role norms by adopting certain socially sanctioned masculine behaviors as well as by avoiding proscribed behaviors (Levant, 1996). Exploratory studies addressing sexual risk behaviors among African American men have emphasized the importance of masculinity ideology (Corneille, Fife, Belgrave, & Sims, 2012; Senn, Scott-Sheldon, Seward, Wright, & Carey, 2011). These studies document men's perceptions of adherence to perceived masculine role norms as a primary explanation for involvement in sexual risk behaviors, such as pursuit of concurrent sexual partnerships and avoidance of condom use (Aronson, Whitehead, & Baber, 2003; Bowleg, 2004; Senn et al., 2011; Whitehead, 1997). Focusing primarily on low-income men in high-risk communities, this emerging research base also illuminates the struggles African American young men report in defining and demonstrating a sense of masculinity in low-resource contexts.

Masculinity theorists have highlighted the importance of examining masculinity as a product of sociohistorical and contextual forces that underscore the unique views of masculinity within racial and ethnic groups. Although a number of exploratory qualitative studies have examined the influence of masculinity on African American men's sexual health risk outcomes such as concurrent partnerships, number of partners, marijuana use, and incarceration experience (Bowleg, 2004; Bowleg & Raj, 2012; Whitehead, 1997), quantitative research is sparse, and measures suitable for investigating masculinity ideology among young African American men in low-resource contexts are rare. Existing measures have been developed primarily for other racial ethnic groups and either high school or college samples (Mahalik et al., 2003; Oransky & Fisher, 2009). To address these limitations and provide an ecologically appropriate evaluation of masculinity ideology for research on African American men's sexual risk behaviors, the present study developed a new measure, in the context of a longitudinal study of rural African American young men's health risk behavior. This study describes the development and initial validation of a brief measure designed to assess the ways in which African American young men from disadvantaged contexts define masculinity ideology, *Masculinity Attributes Questionnaire* (MAQ). This measure was implemented in the African American Men's Project, a panel study of health risk behavior among African American young men living in resource-poor communities in the rural South.

Masculinity Ideology and African American Men's Sexual Risk Behavior

Exploratory studies with African American men have underscored the importance of masculinity ideology in their decisions to engage in risky sexual activities (Aronson et al., 2003; Bowleg, 2004; Senn et al., 2011; Wade, 2009; Whitehead, 1997). These studies are particularly informative in describing the intersection between the challenges associated with resource-poor contexts and views of masculinity. Many concepts concerning traditional masculinity emerged from these studies, such as the idea that men cannot or need not resist hedonistic impulses when opportunities for sex are available (Levant, 2011; Levant, Wimer, Williams, Smalley, & Noronha, 2009). Novel themes emerged as well. For some African American men, opportunity constraints served as a primary influence on their enactment of a sense of masculinity and, by extension, conception of their own sexuality (Bowleg, 2004; Corneille et al., 2012; Whitehead, 1997). For some men, ideas regarding masculinity promoted sexual risk behavior and were linked to the availability of economic and other resources in their context. Safer sexual practices and avoidance of STIs and unplanned pregnancies were linked by researchers to the availability of opportunities for stable employment and expectation regarding marriage and family life (Bowleg, 2004; Bowleg et al., 2011; Whitehead, 1997). These studies implicated the lack of opportunities to assume prosocial roles, such as a provider for a family, in shaping men's ideas about masculine behavior and engaging in risky sexual activities.

The need for quantitative data on the role of masculinity as a psychosocial driver of sexual risk behavior among low-income African American young men sponsored a review of masculinity measures (Bowleg et al., 2011; Whitehead, 1997). Although well-validated measures of masculinity exist (Chu, Porche, & Tolman, 2005; Levant et al., 2007; Mahalik et al., 2003, Oransky & Fisher, 2009), they are limited in their ability to characterize the intersection of poverty and masculinity among African American men. No measures were derived specifically from theory that specifies the effects of opportunity limitations on the development of masculinity. Rather, many measures conceptualized masculinity ideology using variations of gender role theory that specified general masculine/feminine scripts, as seen in the Bem Sex-Role Inventory (Bem, 1981) and operationalized in male role norms surveys (Kimmel & Mahler, 2003; Levant et al., 2007; Mahalik et al., 2003; Thompson & Pleck, 1986). In these studies, masculinity was described as the opposite of femininity. Stringent conformity to broad cultural ideas concerning gender suggests relatively more traditional

and less androgynous ideology. Defining masculinity in these terms, however, has not explained within-group differences among men in concepts of masculinity (Connell & Messerschmidt, 2005).

Recent theory regarding the construction of masculine gender roles stresses the importance of proximal contextual norms for understanding how men construct their masculinity (Connell & Messerschmidt, 2005; Kimmel, 1996). The meaning of masculinity may vary among diverse contexts and with variations in experiences (Connell & Messerschmidt, 2005). Within specific racial/ethnic subgroups, certain masculine attributes are more respected than are those that the culture emphasizes at a broader level (Hammond & Mattis, 2005; Hunter & Davis, 1992). This suggests that, rather than evaluating masculinity across multiple racial/ethnic groups or as the antithesis of femininity, attention should be directed to local conceptualizations of masculinity among specific ethnic groups.

Assessing Rural African American Young Men's Masculinity Ideology

The development of the MAQ was informed in part by aspects of Whitehead's (1997) research with African American and Jamaican men. In particular, his research described two kinds of behavioral attributes or qualities that can be associated with masculinity. Both populations have been exposed to plantation slavery, persistent poverty, and discrimination from Europeans and Americans of European descent. Whitehead's analyses described three semantic pairs used routinely by low-income males to describe men: "big" and "little," "strong" and "weak," and "respectable" and "reputation." Big/strong and little/weak represent high versus low status and power, both economically and sexually. *Big Men* are more likely to pursue a respectable masculine goal, achievable through the expression of male strength and financial capacity, whereas the *Little Men* are left to pursue masculine strength through reputational attributes.

Male strength is expressed through the exhibition of two distinguished masculine attributes. First, masculine *respectability* includes characteristics such as attaining higher levels of education and economic independence from one's parents and from social agencies, being married, and providing a family with a home and acceptable levels of material possessions. On the other hand, attributes associated with masculine *reputation* include sexual prowess, masculine "gamesmanship" skills including toughness and authority-defying behavior, fathering numerous children regardless of one's ability to financially support or nurture them, and "street smarts" as shown through outwitting others—especially Big Men—in con games and successfully "sweet talking" women (see Whitehead, 1997).

Whitehead (1997) suggested that, in general, young men have a tendency to value reputational attributes. As they mature socially, marrying and attaining economic security, respectability attributes are increasingly valued. Men from economically disadvantaged backgrounds, however, experience multiple barriers to respectability-based pathways to masculinity. This may lead them to express and identify with reputation-based attributes in forming their sense of masculinity. Reliance on reputation-based assets to assert masculinity has been hypothesized to place men at greater risk for engaging in sexual risk behaviors (Aronson et al., 2003; Whitehead, 1997).

Summary and Hypotheses

The purpose of the present study was to develop and evaluate a brief measure to assess men's endorsements of reputation-based and respect-based masculinity attributes. Our goal was to develop a measure with two subscales, representing the extent to which a man valued reputation-based or respect-based attributes. In order to evaluate the convergent and discriminant validity of the new measure, this study examined associations of reputation- and respect-based attributes and four psychological factors: academic orientation, vocational engagement, self-regulation, and "street code," defined as an attitude intended to maintain others' respect through a defensive and aggressive identity, a construct associated with aggressive behavior in both rural and urban contexts (Brezina, Agnew, Cullen, & Wright, 2004; Stewart & Simons, 2006). Reputation-based attributes, which focus on values related to sensation seeking, risk taking, and nonconventional and aggressive means of gaining status, were hypothesized to be either negatively associated or not associated with academic orientation, vocational engagement, and self-regulation. Reputation-based attributes were further expected to have positive associations with street code. Respect-based attributes, on the other hand, were hypothesized to be positively associated with academic orientation, vocational engagement, and self-regulation and to demonstrate negative or nonsignificant associations with street code. Finally, criterion validity was assessed by examining the extent to which the MAQ subscales accurately predicted sexual risk behaviors and related risk factors such as multiple/concurrent sexual partnerships, inconsistent condom use, marijuana use, and incarceration experiences.

Method

Participants

The African American Men's Health Project (AMP) included 505 participants who were recruited from 11 contiguous rural counties in southern Georgia. AMP is a

panel study of health risk behaviors, relationship development, and well-being among young African American men living in resource-poor rural communities in the southern United States. Eligibility criteria included self-designation as African American, residence in the sampling area, male gender, and age of 19 to 22 years. The catchment area included federally defined nonurban counties with population densities of less than 100 persons per square mile. This area is representative of the southern "Black Belt," a geographic concentration of rural poverty that coincides with the nation's worst economic and health disparities by race (Reif, Geonnotti, & Whetten, 2006; Wimberley & Morris, 1997).

Participants' mean age was 20.29 years (*SD* = 1.10) and ranged from 19 to 22 years. Level of education attainment ranged from Grade 9 or below to trade school diploma or Associate of Arts degree, with 85% having completed high school or receiving a General Equivalence Diploma. Half of the sample (50.3%) reported current enrollment in school or any type of educational program, and 70.3% were employed at a job or work where they get paid in a paycheck or cash. Among 505 men, 56 men (11.1%) were not currently either employed or enrolled in an educational program. Their average monthly income was $693.79 (*SD* = 587.24). The vast majority (97%) of men had had sex in their lifetime: 94% with just female partner(s), 2% with male and female partners, and 1% with just male partner(s).

Procedures

Participants were recruited using respondent-driven sampling (RDS), a probability sampling method that uses a chain-referral protocol designed to mitigate biases associated with network-based samples. RDS is a preferred method for sampling hard-to-reach populations (Heckathorn, 2002). Data from a pilot study supported the effectiveness of RDS in recruiting samples that represent African American young adults in rural Georgia counties (Kogan, Wejnert, Chen, Brody, & Slater, 2011).

Sampling proceeded as follows: Male and female community Liaisons (CLs) recruited 45 initial "seed" participants across the catchment area. CLs are respected community members who serve as a bridge between participants and the research center. CLs identified young men through their social networks and described the study to them. Project staff contacted interested men, described the project, determined eligibility, and set up a data collection visit at the participant's home or a convenient community site (usually a private room in the public library). On completion of the data collection visit, each of the initial "seed" participants provided the names of three men in their personal networks who met eligibility criteria. Project staff contacted these men regarding

participation. As with the seeds, on completion of data collection, each of these participants provided contact information for three of his network members. For each network member successfully recruited into the study, the referring participant received $25.00. Self-report data were gathered from participants via audio computer-assisted self-interviews. The user-friendly program guides respondents through the survey; those with low literacy skills are assisted through voice and video enhancements. Each participant received $75 at the conclusion of the data collection visit.

Item Development and Refinement

An initial set of items was developed. Investigators identified descriptors from empirical articles describing reputation-based and respect-based attributes per Whitehead's theory and then brainstormed additional items. Four African American men from rural communities adjacent to the research team's university served as an advisory board to the investigators on measures and procedures. The concepts of reputation-based and respect-based attributes were described to the men, and they were asked to generate ideas regarding descriptions and behaviors associated with each attribute. Their responses were recorded in writing. The advisory board also reviewed the original items that the investigators developed. The resulting set of items was then examined for overlap to develop a brief, parsimonious measure to be included in the project battery. Prior to finalizing items, both the advisory board and five African American research staff members reviewed the items for clarity and comprehensibility.

The final measure incorporated into the AMP battery included 18 items designed to represent reputation-based and respect-based attributes of masculinity ideology. The directions read, "Being a 'man' means different things to different people. Below are some statements that men may believe shows that someone is a 'real man.'" On the basis of Doss and Hopkins's (1998) recommendations, each item began with the stem, "A real man . . . " followed by an attribute. The response scale ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). Example items included, "can handle himself in a fight," "has sex with a lot of different women," "has a good paying job," and "gets married or has a committed relationship with one woman." (see the appendix)

Measures

To examine convergent and discriminant validity of the MAQ scale and its associations with HIV-related outcomes, the following measures were included in the battery.

Academic Orientation. Participants reported their experiences at their current or most recent educational programs using an eight-item academic orientation scale (Conger, 1988). Example items included, "I try hard at school" and "I know how to study and how to pay attention in class so that I will do well in school." The response set ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). Cronbach's alpha was .71.

Vocational Engagement. Participants' positive orientation toward work was assessed with a 10-item scale adapted from Kogan and Brody's (2010) work. Participants reported their current or most recent working experiences at a job. Example items included, "I am a dependable employee," "I enjoy working," and "I often get in trouble at work." The response set for these questions ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). Cronbach's alpha was .80.

Self-Regulation. The self-regulation scale assessed individuals' effortful control over their thoughts, feeling, and actions (Brown, Miller, & Lawendowski, 1999). Participants responded to an eight-item version of the Self-Regulation Questionnaire on a scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Example items included, "If I wanted to change, I am confident that I could do it" and "I set goals for myself and keep track of my progress." Cronbach's alpha was .89.

Street Code. Participants completed the seven-item Street Code scale that Stewart and Simons (2006) developed to assess attitudes consistent with the belief that violence, aggressive actions, and toughness are necessary to elicit respect from others. Respondents indicated the extent to which they agreed, from 1 (*strongly disagree*) to 4 (*strongly agree*), with statements such as "Being viewed as tough and aggressive is important for gaining respect" and "People tend to respect a person who is tough and aggressive." Cronbach's alpha for this scale was .75.

Sexual Risk Behaviors. Number of sexual partners was assessed with the open-ended numeric response item, "In the past year, how many different women or girls have you had sex with?" Concurrent sexual partnerships were assessed with two questions. First, men were asked if they had a main female sexual partner; 367 reported in the affirmative. The men who had a main female partner were subsequently asked about having sex with another partner during the past 3 months while still involved with the primary partner. Among young men having a main partner, 191 men reported a monogamous relationship (coded as "0"), and 176 men reported concurrency (coded as "1"). Inconsistent condom use was assessed with an item on which men reported the frequency of condom use with sexual partners on a scale ranging from 0 (*always*) to 4 (*never*). Participants who indicated they used condoms less frequently than always were assigned a 1, indicating inconsistent condom use. Marijuana use was assessed with a single item: "Typically, about how many days per month do you use marijuana (also called weed)?" The response set ranged from 0 (*none*) to 6 (*26-30 days*). Participants reported their incarceration histories using the item, "How many times were you arrested, charged, or booked with a criminal offense in your life time?" The response set ranged from 0 (*none*) to 7 (*7 or more*).

Plan of Analysis

Initial analyses examined the RDS-derived network using the RDS Analysis Tool (Volz, Wejnert, Degani, & Heckathorn, 2007). The statistical theory on which RDS is based suggests that if peer recruitment proceeds through a sufficiently large number of waves, the composition of the sample will stabilize, becoming independent of the seeds from which recruitment began and thereby overcoming any bias the nonrandom choice of seeds may have introduced. This stable sample composition is termed "equilibrium" and should occur within a modest number of recruitment waves (<4). Seed participants were then compared with those who were part of networked chains on all study variables. Nonsignificant differences suggest that the sample may be combined.

A multistep process was used to analyze the MAQ's psychometric properties. First, an exploratory factor analysis was conducted to determine whether the items formed groups that produced conceptually and statistically distinct subscales. A parallel analysis was also used as a technique for determining the number of retained components from the principal component analysis on a correlation matrix. After identifying number of MAQ subscales, the present study created raw scores and latent factors of each MAQ scale. The factor structure composed of respect-based and reputation-based attributes was tested to identify the model that best fit the data. To assess goodness-of-fit, values for chi-square, comparative fit index (CFI; Bentler, 1990), root mean square error of approximation (RMSEA; Browne & Cudeck, 1992), and standardized root mean square residual (SRMR). Higher CFI values and lower RMSEA and SRMR values indicate a good fit. Then, the convergent and discriminant validity of each subscale using raw scores and latent factors was evaluated using bivariate correlations with psychosocial variables. As a final step, this study conducted multiple-regression analyses in which both MAQ subscales were included as predictors of HIV-related risk behaviors and factors.
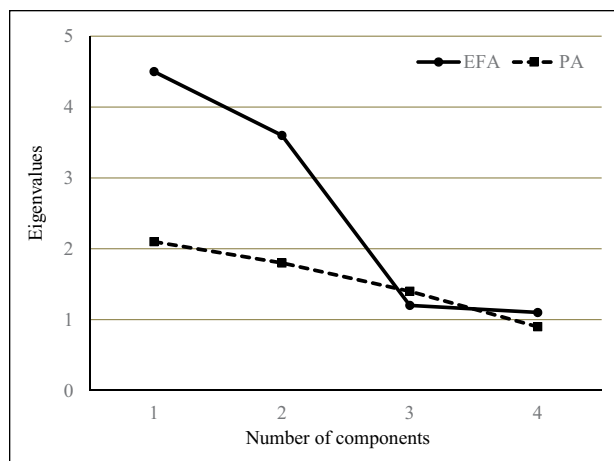
Figure 1. Scree plot of MAQ exploratory factor analysis.
Note. MAQ = Masculine Attributes Questionnaire; EFA = exploratory factor analysis; PA = parallel analysis.

Results

RDS analyses on study variables indicated that recruited participants were not biased by the initial seeds' characteristics; sample equilibrium was achieved within two waves of recruitment on all study variables. *t* Tests comparing, across all study variables, seed participants and participants who were part of networked referral chains were nonsignificant, indicating the acceptability of combining seeds with recruited participants in the analyses.

Factor Analyses and Internal Consistency of MAQ Subscales

An exploratory factor analysis of 18 MAQ items was conducted using a principle component analysis with Varimax rotation. Because retaining all factors with eigenvalues greater than 1 could overestimate substantively the number of true factors (Franklin, Gibson, Robertson, Pohlmann, & Fralish, 1995), the scree plot criterion from both exploratory factor analysis and parallel analysis was used to eliminate potentially unreliable factors. Figure 1 indicated that the eigenvalues for the first two components of the exploratory factor analysis were larger than the corresponding parallel analysis eigenvalues (eigenvalues of factor analysis = 4.5, 3.6, 1.2, 1.1; eigenvalues of parallel analysis = 2.1, 1.8, 1.3, 0.9). Comparison of factor analysis and parallel analysis eigenvalues (see Figure 1) supported a two-factor solution (Kaiser–Meyer–Olkin Measure of Sampling Adequacy = .840; Bartlett's Test of Sphericity = 3277.396, degrees of freedom [*df*] = 153, *p* = .000). The total variance that these two factors explained was 44.78%. Factor 1, *reputation-based attributes*, accounted for 25.06% of the variance, and Factor 2, *respect-based attributes*,

accounted for 19.72%, of the variance. Both factors included nine items. Items, their loading values, means, standard deviations (*SD*s), and alpha-if-item-deleted are provided in Table 1. All items evinced a factor loading of at least .43 on their respective factors. Cronbach's alphas were .83 for reputation-based attributes and .77 for respect-based attributes. Also, latent factors of the MAQ subscales were created using a structural equation modeling, and this model demonstrated a good fit to the data, $\chi^2(104) = 208.63$, $p < .001$, CFI = .97, RMSEA = .03, and SRMR = .05. All items evinced a factor loading ranging from .40 to .82.

Validity of the MAQ

Convergent and discriminant validity were assessed by examining relations between the MAQ subscales and psychosocial scales. Correlations of MAQ subscales using raw scores and latent factors with masculinity-related constructs were presented in Table 2. As hypothesized, reputation-based attributes (raw score) were positively associated with street code ($r = .38$, $p < .01$) and negatively related to academic orientation ($r = -.24$, $p < .01$), vocational engagement ($r = -.36$, $p < .01$), and self-regulation ($r = -.09$, $p < .05$). On the other hand, respect-based attributes (raw score) were positively associated with academic orientation ($r = .21$, $p < .01$), vocational engagement ($r = .29$, $p < .01$), and self-regulation ($r = .23$, $p < .05$), and were not significantly related to street code ($r = .07$, *ns*). Consistent correlation patterns between latent factors of MAQ subscales and these psychosocial constructs were detected.

Multiple regression analyses were conducted to determine the criterion validity of the MAQ subscales using raw scores and latent factors. Reputation-based and respect-based attributes were simultaneously entered as explanatory variables to predict sexual risk behaviors and related risk factors (see Table 3). Consistent with study hypotheses, reputation-based attributes (raw score) significantly predicted multiple sexual risk behavior outcomes including concurrent sexual partnerships ($b = .25$, $p < .01$), number of sexual partners in the past year ($b = .25$, $p < .01$), marijuana use ($b = .09$, $p < .05$), and incarceration in life time ($b = .11$, $p < .05$). However, inconsistent condom use was not significantly associated with reputation-based attributes ($b = .10$, $p = .07$). Respect-based attributes (raw score) were negatively associated with number of sexual partners ($b = -.09$, $p < .05$) and marijuana use ($b = -.10$, $p < .05$); no significant relationships with other risk outcomes emerged. Using latent factors of MAQ subscales, these results of multiple regression analyses were consistent with those using raw scores of MAQ subscales, except nonsignificant association between marijuana use and a latent factor of reputation-based attributes ($b = .07$, $p = .07$).

Table 1. Rotated Factor Loadings, Interitem Subscale Reliabilities, Item Means and Standard Deviations, and Alpha if Item Deleted.

Scale item	Factor loading	M	SD	Alpha if item deleted
Reputation-based attributes (α = .83)				
A real man shows off expensive jewelry.	.81	1.72	0.75	.79
A real man carries a lot of cash in his pocket and shows it off.	.74	1.57	0.73	.80
A real man has sex with a lot of different women.	.73	1.67	0.72	.80
A real man has children by many different women.	.68	1.57	0.72	.81
A real man has a reputation as a tough guy.	.66	2.24	0.84	.81
A real man has a reputation as a ladies' man.	.62	2.29	0.93	.81
A real man makes his enemies afraid of him.	.62	2.22	0.90	.82
A real man puts his male friends (bros) before his girlfriends.	.57	1.65	0.75	.82
A real man can handle himself in a fight.	.43	3.13	0.92	.84
Respect-based attributes (α = .77)				
A real man spends a lot of time with his children.	.72	3.80	0.44	.75
A real man works to get a good education.	.71	3.58	0.61	.74
A real man gets married or has a committed relationship with one woman.	.65	3.64	0.63	.75
A real man has a good job.	.65	3.33	0.84	.73
A real man provides for his children.	.62	3.91	0.30	.76
A real man works hard to get ahead.	.62	3.84	0.42	.76
A real man obeys the law.	.60	3.23	0.79	.74
A real man has a good paying job.	.52	3.12	0.90	.76
A real man is a religious person.	.45	2.88	0.89	.77

Note. Items were scored on a 4-point Likert-type scale: 1 (*strongly disagree*), 2 (*disagree*), 3 (*agree*), 4 (*strongly agree*). Mean (*SD*) of total reputation-based attributes score = 2.01 (0.53). Mean (*SD*) of total respect-based attributes score = 3.48 (0.41).

Table 2. Correlations of MAQ Subscales With Scales Tapping Masculinity-Related Constructs and Indicators of Sexual Risk Behavior.

MAQ subscales	Academic orientation	Vocational engagement	Self-regulation	Street code	Concurrent partnership	Sexual partner number	Inconsistent condom use	Marijuana use	Incarceration
Reputation-based attributes[a]	−.24**	−.36**	−.09*	.38**	.24**	.25**	.09	.09*	.11*
Reputation-based attributes[b]	−.20**	−.35**	−.10*	.35**	.21**	.20**	.06	.09*	.09*
Respect-based attributes[a]	.21**	.29**	.23**	.07	.01	−.09*	−.02	−.10*	−.03
Respect-based attributes[b]	.19**	.31**	.20**	.09	.02	−.09*	−.01	−.09*	.01
Mean	3.11	3.43	3.42	2.68	0.48	6.10	0.58	1.78	0.90
SD	0.44	0.40	0.51	0.55	0.50	6.89	0.49	2.41	1.92

Note. MAQ = Masculine Attributes Questionnaire.
[a]Raw score of MAQ subscales. [b]Latent factor of MAQ subscales.
*p < .05. **p < .01 (two-tailed tests).

Discussion

Exploratory research has linked endorsement of and adherence to masculinity ideologies with sexual risk behaviors among African American young men; this association is particularly prevalent among men living in challenging socioeconomic contexts (Aronson et al., 2003; Bowleg, 2004). No measures, however, were available to capture the interaction of disadvantage and African American young men's masculinity attitudes. The primary goal of this study was to develop a theoretically and empirically grounded measure of masculine attributes for sexual health research with African American young men. This goal was met through the construction and

Table 3. Multiple-Regression Analyses With Sexual Risk Behaviors as the Outcome Variables and MAQ Subscales as Based on Raw Scores and Latent Factors.

MAQ subscales	Concurrent partnerships		Number of sexual partners		Inconsistent condom use		Marijuana use		Incarceration	
	b	SE	b	SE	b	SE	b	SE	b	SE
Reputation-based attributes[a]	.25**	.02	.25**	.04	.10	.06	.09*	.04	.11*	.04
Reputation-based attributes[b]	.19**	.03	.19**	.04	.06	.05	.07	.04	.09*	.04
Respect-based attributes[a]	.01	.02	−.09*	.04	−.02	.05	−.10*	.04	−.03	.04
Respect-based attributes[b]	.01	.02	−.09*	.04	−.01	.05	−.09*	.04	.02	.04

Note. SE = standard error; MAQ = Masculine Attributes Questionnaire. All variables were standardized by z transformation (mean = 0 and SD = 1).
[a]Raw score of MAQ subscales. [b]Latent factor of MAQ subscales.
*p < .05. **p < .01 (two-tailed tests).

validation of the MAQ. Informed by Whitehead's (1997) research on masculinity ideology among Black men, the MAQ assesses men's endorsement of two distinct forms of masculine attributes: (a) reputation-based attributes that are oriented toward sexual prowess, toughness, authority-defying behavior, and "street smarts" and (b) respect-based attributes that are oriented toward economic independence, socially approved levels of hard work and education, and committed romantic relationships (Whitehead, 1997).

Consistent with Whitehead's theory (1997), comparison of exploratory factor analysis and parallel analysis supported the bidimensional structure of the measure. Based on the comparison of factor analysis and parallel analysis eigenvalues for this data, two factors emerged in these analysis. Each comprised nine items and demonstrated reliabilities of .83 for the reputation factor and .77 for the respect factor. Using the criterion of a parallel analysis eigenvalue greater than a factor analysis eigenvalue, the number of MAQ components was determined, and this analytic approach is an efficient and robust means for determining the number of principal components to retain (Franklin et al., 1995).

Convergent and discriminant validity were assessed by examining correlations between the MAQ subscales and psychosocial variables. To avoid the hazards of relying on raw scores which, compared with latent factors, would have more statistically significant associations with psychosocial variables and sexual risk outcomes (Levant, Hall, Weigold, & McCurdy, 2016), both raw scores and latent factors of the MAQ subscales were examined. Generally, results using latent factors were consistent with those using raw scores of MAQ subscales.

Consistent with study hypotheses, reputation-based attributes were associated positively with street code and negatively related to academic orientation, vocational engagement, and self-regulation. Also consistent

with the hypotheses, respect-based attributes were associated positively with academic and vocational orientations and self-regulation. Consistent with Whitehead's theory (1997), reputational attributes were characterized by toughness and poor psychosocial adjustment, reflected in endorsement and internalization of cultural belief systems about masculinity rooted in disadvantaged communities. On the other hand, respectable attributes were associated with psychosocial adjustment reflecting successful fulfillment of male role expectations and conformity to the standards and ideals of conventional society.

Criterion validity was investigated in the prediction of two sexual risk behavior outcomes, multiple sexual partners (in the entire sample) and concurrent sexual partnerships (in the subsample reporting a main female partner). Incarceration and marijuana use also were investigated. One of research goals in designing the MAQ was to produce an instrument sensitive to sexual risk behaviors and related risk factors. Whitehead and colleagues (Whitehead, 1997; Whitehead, Peterson, & Kaljee, 1994) hypothesized that men who endorse reputation-based attributes will experience greater risk for STIs-related activities and other risk behaviors. Consistent with this expectation, the reputation subscale predicted concurrent sexual partnerships, multiple sexual partners, marijuana use, and incarceration, net of the influence of respect-based attributes. Inconsistent condom use, however, was not significantly associated with both reputation- and respect-based attributes. It is plausible based on prior studies reporting the complexity of condom use patterns. Inconsistent condom use was associated with conventional behavior (i.e., men in marriage or in a monogamous romantic relationship often reduce their condom use in favor of other birth control), while men who engage in more sexual risk behavior many increase their use of condoms (Hicks, Kogan, Cho, & Oshri, 2016).

Masculinity ideology has been implicated in several qualitative studies on sexual risk behaviors among low socioeconomic status, African American men. The development of the MAQ provides a new measure that permits systematic quantitative investigation of the associations between African American men's masculinity ideology and sexual risk behavior. According to Whitehead (1997), when young men are confronted with challenging environments that provide minimal resources and diminishing social support to help them embark on beneficial life paths, they tend to adopt and value reputational attributes (Cassidy & Stevenson, 2005; Whitehead, 1997). Evidence of the MAQ's construct validity with an African American sample provides a measure uniquely suited to investigations of the ways in which adverse community environments and cultural norms affect sexual risk behaviors. Given the significant associations between the reputation-based attribute of the MAQ and sexual risk behaviors, it is important to consider the development of masculinity ideology in relation to the community and cultural contexts to which African American young men are exposed.

The present study has limitations that must be considered in using the MAQ. First, the instrument was developed with a sample of African American young men from rural communities in southern Georgia. This measure was developed focusing on a narrow domain of African American young male's masculinity ideology, so the factorial and construct validity of the scales with other African American populations (e.g., urban men, older or younger men) are not known. Also, the quantitative approach on the development of masculinity ideology measure in the present study would not capture some important aspects of Whitehead's work associated with discourse analysis. Qualitative development of items based on the experiences and perspectives of rural African American young men should be considered in the future study. Also, self-report bias may inflate associations between masculinity and the variables used to examine the validity of the measure, and future replication should involve more objective measures. These concerns notwithstanding, the MAQ demonstrated factorial and construct validity, as well as significant sensitivity to outcomes, for use in studies of the links between masculinity ideology and sexual risk behavior among rural African American young men.

Appendix

Being a "man" means different things to different people. Below are some statements that men may believe shows that someone is a "real man." Do you strongly agree, agree, disagree, or strongly disagree?

1	2	3	4
Strongly disagree	Disagree	Agree	Strongly agree

Reputation-based attributes
- A real man can handle himself in a fight.
- A real man makes his enemies afraid of him.
- A real man has children by many different women.
- A real man carries a lot of cash in his pocket and shows it off.
- A real man puts his male friends (bros) before his girlfriends.
- A real man has sex with a lot of different women.
- A real man shows off expensive jewelry.
- A real man has a reputation as a ladies' man.
- A real man has a reputation as a tough guy.

Respect-based attributes
- A real man has a good paying job.
- A real man works to get a good education.
- A real man gets married or has a committed relationship with one woman.
- A real man spends a lot of time with his children.
- A real man provides for his children.
- A real man works hard to get ahead.
- A real man is a religious person.
- A real man obeys the law.
- A real man has a good job.

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