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"Macho Men" and Preventive Health Care: Implications for Older Men in Different Social Classes

Kristen W. Springer[1,2] and Dawne M. Mouzon[1]

Abstract

The gender paradox in mortality—where men die earlier than women despite having more socioeconomic resources—may be partly explained by men's lower levels of preventive health care. Stereotypical notions of masculinity reduce preventive health care; however, the relationship between masculinity, socioeconomic status (SES), and preventive health care is unknown. Using the Wisconsin Longitudinal Study, the authors conduct a population-based assessment of masculinity beliefs and preventive health care, including whether these relationships vary by SES. The results show that men with strong masculinity beliefs are half as likely as men with more moderate masculinity beliefs to receive preventive care. Furthermore, in contrast to the well-established SES gradient in health, men with strong masculinity beliefs do not benefit from higher education and their probability of obtaining preventive health care *decreases* as their occupational status, wealth, and/or income increases. Masculinity may be a partial explanation for the paradox of men's lower life expectancy, despite their higher SES.

Keywords:

aging, masculinity, men's health, SES gradient, Theory of Fundamental Causes

Determinants of men's health have received relatively little attention despite the fact that men's life expectancy at birth is five years less than women's, men's life expectancy at 65 is three years less than women's, and men have higher rates of 12 of the 15 leading causes of death in the United States (Centers for Disease Control and Prevention [CDC] 2008; Heron et al. 2009). These health disadvantages are striking given men's higher socioeconomic status (SES) relative to women, on average. In other words, these disadvantages run counter to the well-established SES gradient in health, whereby higher SES predicts better health, more health care seeking, and a longer life (Adler et al. 1994).

One contributor to men's elevated mortality risk is their greater engagement in preventable health risks, including smoking, drinking, and lower rates of seeking health care (Courtenay 2000, 2003; Starfield, Shi, and Macinko 2005). Among midlife and older individuals especially, forgoing or delaying preventive health care is an important contributor to poor health (Goldberg and Chavin 1997). Many national health organizations and physicians recommended that men older than 50 receive preventive health care services each year, including a flu shot, general exam, and prostate exam (Agency for Health Care Research & Quality 2008; CDC 2007; Smith, Cokkinides, and Eyre 2006). However, men are less likely than women to seek health care—even after accounting for reproductive and sex-specific conditions (Courtenay 2000; Williams 2003).

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Extensive qualitative and exploratory research suggests that men's health care avoidance is due in part to masculinity ideals that link "manhood" with feelings of invincibility and a reluctance to ask for help (Courtenay 2000; Galdas, Cheater, and Marshall 2005; O'Brien, Hunt, and Hart 2005). However, the relationship between masculinity ideals and health care avoidance has not yet been explored systematically in a population-based sample and therefore it is not yet known whether prior exploratory findings are limited to clinical and other nonrepresentative samples. There is also scant information on how masculinity affects multiple types of health care–seeking behaviors (Addis and Mahalik 2003; O'Brien et al. 2005).

Furthermore, scholars have called for "a more contextual framework that allows for and expects variability within men and between help-seeking situations" (Addis and Mahalik 2003:6)—with a particular need to examine socioeconomic variations and different types of health care seeking (Addis and Mahalik 2003; Galdas et al. 2005). The few studies that examine SES variations in health care seeking indicate variability but provide perplexing and contradictory results (Courtenay 2000; O'Brien et al. 2005). For example, some research finds that masculinity only interacts with SES to promote health care seeking among lower SES men, whereas other scholarship hypothesizes that masculinity interacts with SES to reduce health care seeking primarily among upper SES men (Courtenay 2000; O'Brien et al. 2005).

Finally, most research on masculinity focuses on younger men—making the growing population of older men virtually invisible (Calasanti and King 2005; Thompson 1994). However, older men's masculinity and health is theoretically and empirically important. Theoretically, the emasculization of aging men provides a rich case study to examine how the experience of manhood varies by location in different social structures (Calasanti 2004). Empirically, examining masculinity and health among older men is critical given a growing aging population, relatively high rates of masculinity-related suicide among older white men, and the onset of masculinity-related health conditions like prostate cancer (Swami, Stanistreet, and Payne 2008; Yin 2006).

We address these limitations by using data from a population-based sample of 65-year-old men to: (1) assess the extent to which strong endorsement of masculinity ideals predicts preventive health care (annual exam, prostate exam, flu shot, and compliance with all three services) and (2) examine whether SES (education, occupational status, household income, and wealth) interacts with masculinity to influence health care seeking. We integrate gender theoretical perspectives on hegemonic and multiple masculinities with the theory of fundamental causes to frame and contextualize the project.

Understanding the direct and interactive influences of masculinity and SES on health care seeking is important for research, theory, and policy on older men's health. For example, health disparities research prioritizes SES as *the* primary determinant of health inequality (Dow et al. 2010; Elo 2009). However, if masculinity ideals directly shape health care seeking and/or moderate the influence of SES on health care seeking, the findings would underscore the necessity of prioritizing ideological gender norms—as well as economic resources—as predictors of health inequalities. The results could also help pinpoint for whom SES has the most and least pronounced health effects by demonstrating how SES affects health differently dependent on other characteristics—such as masculinity beliefs. Furthermore, evidence that masculinity beliefs attenuate the well-established health-promoting effect of SES could help illuminate one possible cause of the persistent gender paradox in mortality.

THEORETICAL FRAMEWORKS

This project engages with two theoretical frameworks: (1) the gender relations perspective on hegemonic and multiple masculinities and (2) the theory of fundamental causes perspective on the SES gradient in health.

Hegemonic and Multiple Masculinities

Gender relations theory conceptualizes gender as a social institution and a pervasive system of stratification that structures relationships between men and women (Connell 1987; Martin 2004; Risman 1998). Gender is a primary signifier of power (Scott 1986) and is something people (re)produce in everyday social interactions (West and Fenstermaker 1995; West and Zimmerman 1987). For men, striving to attain the cultural norms of appropriate manhood is one way gender is constructed (Connell 1987; Connell and Messerschmidt 2005).

Current scholarship conceptualizes masculinity as varied and context dependent (Connell 1987; Connell and Messerschmidt 2005; Kimmel and

Messner 2001). There is no monolithic, static conception of masculinity—but rather there are multiple masculinities that exist in relation to the ideal-type masculinity—hegemonic masculinity. Hegemonic masculinity is the most socially desirable and idealized vision of manhood (Connell 1987; Connell and Messerschmidt 2005). In the contemporary United States, hegemonic masculinity is associated with confidence, power, self-reliance, financial success, heterosexual prowess, and invulnerability as embodied by white, affluent, healthy, strong, and young men (Brannon 1976; Connell 1987; Connell and Messerschmidt 2005).

Although hegemonic masculinity is ideologically normative, it is not a statistical norm. Men may identify hegemonic masculinity as the societal ideal-type of masculinity, but most men do not achieve all aspects of this ideal. Furthermore, there is dramatic variation in the degree to which men endorse and strive for these masculinity ideals, dependent on their location in other social structures including SES, race, age, birth cohort, and sexual orientation (Calasanti 2004; Calasanti and King 2005; Connell 1992; Pyke 1996). For example, the older men in the sample analyzed here were born in 1939, came of age during the 1950s male breadwinner/female homemaker era, and therefore likely have particularly strong beliefs in hegemonic masculinity. The specific aspect(s) of hegemonic masculinity that are enacted and/or idealized also vary dependent on other social structural positions. Older men may be more likely to value autonomy if they cannot demonstrate sexual process and/or occupational success as masculine identities (Calasanti 2004; Calasanti and King 2005; Meadows and Davidson 2006).

SES Gradient in Health: Theory of Fundamental Causes

Scholars have consistently documented the SES gradient for a range of health care–seeking outcomes, including general check-ups and vaccinations (Blackwell et al. 2009; Lutfey and Freese 2005). The theory of fundamental causes is a prominent explanation of the SES gradient in health (Link and Phelan 1995; Phelan, Link, and Tehranifar 2010). According to the theory of fundamental causes, SES embodies an array of flexible resources—including money, power, prestige, and knowledge—that can be used to gain a health advantage, in large part through influencing access to and knowledge about health behaviors. Despite widespread evidence for the theory of fundamental causes, it does not readily explain the gender paradox of men's higher SES but shorter life spans, lower use of health care, and higher rates of many leading causes of death (Bird and Rieker 2008; Kung et al. 2008).

More recent writing about fundamental causes offers a potential schema for explaining this gender paradox. Lutfey and Freese (2005) discuss the possibility of countervailing mechanisms—whereby people choose not to use their flexible resources for health promotion in order to maintain or enhance their social status. In the context of this project, striving for hegemonic masculinity may be a countervailing mechanism. Specifically, it is plausible that high SES men with strong masculinity beliefs will avoid preventive health care to preserve their masculine status rather than use their SES for health enhancement (Phelan et al. 2010). If so, the results would show that high SES does not promote preventive health care seeking among men with strong masculinity beliefs.

MASCULINITY AND PREVENTIVE HEALTH CARE SEEKING

Gender-theoretic research on masculinities indicates that (not) performing health behaviors is one way to enact hegemonic masculinity (Addis and Mahalik 2003; Galdas et al. 2005; Mahalik, Lagan, and Morrison 2006; O'Brien et al. 2005). As Courtenay (2000) explains:

> In exhibiting or enacting hegemonic ideals with health behaviours, men reinforce strongly held cultural beliefs that men are more powerful and less vulnerable than women; . . . that asking for help and caring for one's health are feminine; and that the most powerful men among men are those for whom health and safety are irrelevant. (p. 1389)

However, far less is known about masculinity and preventive health care, despite the fact that preventive health care seeking may be particularly susceptible to masculinity enactment because it is more voluntary than seeking treatment for an acute health problem. Preemptive use of health care can be seen as announcing concern about one's health, whereas treating an acute problem can be rationalized in the more masculine framework of "fixing a problem."

It is possible that masculinity beliefs differentially affect specific aspects of preventive health

care seeking. Prior research suggests that sexual organ–based health care (i.e., prostate exams) may be particularly influenced by masculinity ideals because of the direct link between hegemonic masculinity ideals and sexual prowess (O'Brien et al. 2005). Seeking a flu shot could be seen as revealing one's concern about a relatively mild illness, thereby posing a pronounced masculinity threat. Similarly, getting a general exam could pose a large masculinity threat because it is typically sought in the absence of an acute threat. In contrast, flu shots might be less influenced by masculinity ideals if other barriers are low (i.e., worksite administration of the vaccine) or if obtaining a flu shot produces other masculinity benefits (i.e., fewer sick days at work).

Furthermore, there is very little research on masculinity and health care seeking among older men, although feminist gerontological theorizing provides useful insights and testable predictions (Calasanti 2004; Calasanti and King 2005; Meadows and Davidson 2006). As men age, many of the masculinity enactments and symbols are less salient or available—including sexual prowess, business pursuits, and physical strength. Older men may therefore be more likely to enact hegemonic masculinity through other strategies—including two equally plausible routes with opposite effects on preventive health care seeking. Specifically, older men may strongly embrace self-reliance as a last bastion of masculinity and therefore avoid seeking health care. Alternatively, older men may hold tightly to their physical health as a last vestige of masculinity and therefore proactively seek health care.

Socioeconomic Status, Masculinity, and Health Care Seeking

Scholars have identified men's health care seeking as a particularly salient arena for further understanding class-based masculinity effects. For example, Galdas and colleagues (2005) state: "Further research is urgently required to investigate the determinants of men's help-seeking behaviour, in particular the influence of masculine beliefs and the variations between men of differing socio-economic status, age and ethnicity" (p. 622).

Empirical studies of masculinity, SES, and men's health care seeking are scant but promising. This research explicitly or implicitly focuses on men's occupational status—providing little insight into whether other crucial aspects of SES (i.e., education) shape the relationship between masculinity and men's health care. Courtenay (2000) suggests, but does not test, that health care avoidance might be a predominantly higher status occupational form of masculinity enactment. Courtenay (2000) reasons that upper-class men may forgo health care to avoid being in a lower status position (patient) with a person (physician) who would normally be a similar status peer. Articulated more broadly, Courtenay's (2000) argument could mean that men who have attained one dominant aspect of hegemonic masculinity (high SES) and who also believe strongly in hegemonic masculinity might be particularly hesitant to risk losing their masculinity status by looking weak or asking for help—including seeking health care. It is also plausible that all men with strong masculinity beliefs would prefer to avoid health care seeking, but only those with higher SES have alternative resources (friends who are doctors and/or knowledge to self-treat) that allow them to avoid health care yet remain healthy.

In terms of older men, Calasanti and King (2005) suggest that men who had achieved masculinity status through social class may be particularly affected by age-related declines (e.g., retirement, aging bodies, and declining sexual function), because these declines destabilize their previously achieved masculinity status. Therefore, these higher status older men with strong masculinity beliefs may be more likely than lower status men to enact masculinity using whatever forms are available to them—primarily independence and stoicism. One grim manifestation of this strategy is the relatively high suicide rate of higher status elderly men that has been linked to untreated depression (Swami et al. 2008; Yin 2006).

Other class-based masculinity research indicates that masculinity ideals may promote health care seeking among some SES subgroups. O'Brien et al. (2005) found that hegemonic masculinity promoted health care seeking among men with lower status, stereotypically masculine occupations (i.e., firefighters). The authors propose that seeking health care is a way of acting masculine through protecting productivity in a job that requires physical exertion.

Taken together, these prior studies suggest that endorsement of hegemonic masculinity ideals may have a significantly greater adverse effect on health care seeking for men in higher status occupations and/or a greater health-promoting effect on health care seeking for men in some lower status occupations. However, these hypotheses have not

been rigorously tested and no prior research has assessed the relationships between masculinity and other well-known SES determinants of health care (i.e., education). In this project, we test variations in the relationship between masculinity and health care seeking across multiple SES measures.

Other Influences on Masculinity and Health Care Seeking: Social Selection and Confounders

To rigorously examine the effect of masculinity (and its potential interaction with SES) on men's preventive health care seeking, it is essential to account for possible confounders and omitted variables. For example, men from farm backgrounds have both stronger masculinity beliefs and lower rates of health care (Campbell, Bell, and Finney 2006; Courtenay 2000). Growing up with educated parents (mothers in particular) and/or with an employed mother is associated with less rigid gender beliefs among men (Bolzendahl and Myers 2004). Marriage promotes healthy behaviors, especially for men (Umberson 1992). Without controlling for these variables, it is not possible to know whether a statistical association between masculinity and health is spurious.

We address these limitations and extend prior research by assessing two main questions: (1) (how) does endorsement of hegemonic masculinity ideals affect older men's preventive health care seeking and (2) (how) do SES and masculinity endorsement intersect to affect older men's health care seeking? We further explore the potential complexities of these two questions by assessing variations across four outcomes (prostate exam, flu shot, annual exam, and compliance with all three services) and four SES measures (education, occupational education, household income, and wealth).

METHOD

Data and Sample

Data for the current project come from the Wisconsin Longitudinal Study (WLS), a large, longitudinal study of education, careers, health, and aging (Sewell et al. 2003). The WLS began with a one-third random sample of adolescent males and females who graduated from Wisconsin high schools in 1957, with subsequent waves of data collected in 1964, 1975, 1992, and 2004. The WLS is a useful sample for this project because the respondents are chosen without regard to health status, the WLS contains extensive longitudinal information on SES and health, and the WLS includes a hegemonic masculinity scale. The masculinity scale was included in a 50 percent random sample of the 2004 surveys—when the respondents were 65 years old. We restrict our analytic sample to men who have complete data on all items, resulting in approximately 1,000 men, depending on the specific outcome.[1]

Some strata of the U.S. population are not well represented in the WLS. By design, all sample members graduated from high school in 1957. Furthermore, nearly all study participants are white. Nonetheless, the sample is broadly representative of older white Americans who have completed at least a high school education. Furthermore, whites who have completed at least a high school education accounted for more than two-thirds of all American women and men aged 60 to 64 years in 2000 (U.S. Bureau of the Census 2003). Nonetheless, the findings and associated implications must be understood in light of our particular sample.

Measures

Outcome variables. We explored three indicators of preventive health care often recommended for men older than 50, as well as an indicator of compliance with all three recommendations (CDC 2007; Smith et al. 2006).[2] Specifically, we assessed whether the respondent reported receiving a "complete exam or physical," a prostate examination, a flu shot, and/or all three preventive services in the past 12 months.

Hegemonic masculinity. The eight-item WLS masculinity scale was developed to measure different dimensions of hegemonic masculinity (Connell 1987), capturing Brannon's four themes of masculinity: success, toughness, independence, and concealing emotions (Brannon 1976). The eight items listed next had response choices of *strongly agree* (1), *agree* (2), *neither agree nor disagree* (3), *disagree* (4), and *strongly disagree* (5).

1. "When a husband and wife make decisions about buying major things for the home, the husband should have final say."
2. "A man should always try to project an air of confidence even if he really doesn't feel confident inside."
3. "It bothers me when a man does something that I consider 'feminine.'"
4. "Men have greater sexual needs than women."

5. "When a man is feeling pain, he should not let it show."
6. "In some kinds of situations, a man should be ready to use his fists."
7. "Being larger, stronger-looking, and more muscular makes men more attractive to women."
8. "It is much better for everyone if the man earns the main living and the woman takes care of the home and family."

The scale reliability is modest (.61), but it is slightly higher than the alpha of .56 for a masculinity scale of the same length (Pleck, Sonenstein, and Ku 1993). A partial explanation for the modest reliability is that the scale was designed to be short and to measure different aspects of hegemonic masculinity and therefore, by design, does not include multiple items measuring the same aspect of masculinity (Brannon 1976). Additional analyses examining how this masculinity scale predicts male-typed, female-typed, and gender-neutral hobbies provide further support for the validity of the measure (results available upon request).

For this project, we created a dichotomous indicator of strong masculinity beliefs—because theory and qualitative research suggest that strong beliefs in hegemonic masculinity trigger poor health behaviors (O'Brien et al. 2005). Specifically, we created the dichotomous indicator coded as 1 for the one-fourth of men with the strongest endorsement of hegemonic masculinity ideals ("masculinity idealists") and coded as 0 for the three-quarters of men with more modest endorsement of hegemonic masculinity ideals ("masculinity moderates"). The top 25th percentile was chosen because it focuses on men who have high subscription to hegemonic masculinity ideals, but who are not extreme (i.e., 99th percentile).

SES variables. The adult SES variables (education, household income in the year prior to study, wealth, and occupational education) were measured in 2004. Respondents' education was coded using a dummy variable for college degree or more (1) versus less than a college degree (0). Household income and wealth were measured in dollars. Wealth included all assets such as home equity, retirement savings, life insurance, and bank accounts. We recoded the six negative wealth values to 0 and top coded the highest 2 percent of income and wealth cases to reduce skew. Occupational education of current job (or last job if not currently employed) was measured on a scale of 0 percent to 100 percent, representing the percentage of individuals in the occupation who completed at least one year of college. We transformed the raw percentages into started logit scores and divided by 10 to reduce heteroscedasticity in the residuals (Hauser and Warren 1997).

Control variables. We included control variables for childhood and adult context. Childhood context was measured by four variables, each collected in the 1975 survey. Mother's and father's education were measured in years and top-coded at 20. Dichotomous variables indicated whether the respondent reported having a farm background and if the respondent's mother was employed in 1957. Adult context variables included age, marital status, prior self-reported health, and employment status.[3] Race was not controlled for because the WLS is almost entirely white. All adult variables—with the exception of self-reported health—were measured in 2004 because it is more plausible that contemporaneous context (rather than context 10 years prior) affects health care seeking in the past 12 months.[4] Self-reported health was measured in 1992 to provide a baseline health measure. Age was measured in years and marital status was coded using a dummy variable for currently married (1) versus not currently married (0). Baseline self-reported health was measured with a 5-point scale from *very poor* (1) to *excellent* (5). Current employment was measured with a dichotomous indicator (employed/not employed).[5]

ANALYTIC STRATEGY

We begin by presenting descriptive and bivariate statistics using independent sample *t* tests and chi-square tests. We then use logistic regression to examine the direct influence of masculinity ideals on each preventive health measure and to explore the interactive effect of masculinity ideals with each of the four SES variables. All models include hegemonic masculinity, childhood context, adult context, and adult SES variables. Analyses were conducted with Stata SE 11.0 (StataCorp 2009).

RESULTS

Table 1 presents the descriptive statistics for all men, masculinity idealists, and masculinity moderates—with bivariate tests comparing the idealists and moderates. The mean value of masculinity endorsement for all men was 22.43 (SD = 3.77), with scores ranging from 8 to 40. The mean value

Table 1. Descriptive Statistics for All Variables Used in Analyses[a]

	All Men (*N* = 1,045)		Masculine Idealists (*N* = 304)		Masculine Moderates (*N* = 741)	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*
Hegemonic Masculinity Scale	22.43	3.77	26.74***	1.90	20.66***	2.79
Childhood context						
Mother's education (years)	10.67	2.75	10.68	2.76	10.66	2.75
Father's education (years)	9.78	3.51	9.59	3.45	9.86	3.53
Farm background (percent)	19.33		23.03+		17.81+	
Employed mother (percent)	37.51		40.46		36.30	
Adult context						
Age	64.63	.62	64.63	.61	64.63	.63
Married (percent)	87.66		88.16		87.45	
Self-reported health	4.21	.62	4.14*	.65	4.23*	.60
Currently employed (percent)	49.86		51.32		49.26	
Socioeconomic status						
College degree or more (percent)	37.03		31.58*		39.27*	
Household income (dollars)	79,808	68,942	80,460	72,676	79,541	67,399
Wealth (dollars)	773,526	869,077	745,389	861,736	785,069	872,387
Occupational education (percent)[b]	59.06		58.24		59.40	
Outcomes[c]						
Physical exam in past 12 months (percent)	75.12		71.05+		76.79+	
Prostate exam in past 12 months (percent)	73.65		68.84*		75.64*	
Flu shot in past 12 months (percent)	61.77		56.86*		63.80*	
Compliant with all three services (percent)	45.62		34.83***		50.07***	

[a]Sample size based on physical exam sample (*N* = 1,045). Independent sample *t* tests were conducted for continuous and ordinal variables; chi-square tests were conducted for dichotomous variables.

[b]Occupational education was measured as the percentage of individuals in the occupation who completed at least one year of college. Subsequent analyses used started logit transformations suggested by Hauser and Warren (1997).

[c]Sample sizes vary slightly for prostate exam (*N* = 998), flu shot (*N* = 1,049), and compliance with all three services (*N* = 993).

$^{+}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

of the masculinity scale for the 25 percent of men with the strongest subscription to hegemonic masculinity (masculinity idealists) was 27 out of 40, compared to 21 out of 40 for the remaining 75 percent of men. Masculinity idealists and moderates were similar on control and SES variables with two exceptions: Masculinity moderates had significantly better self-reported health (4.23 for moderates and 4.14 for idealists, $p = .037$) and were more likely to have a college degree (39 percent of moderates and 32 percent of idealists, $p = .022$).

Masculinity idealists were less likely than moderates to have obtained preventive health care in the last 12 months. For example, 71 percent of masculinity idealists obtained a preventive physical exam, compared to 77 percent of masculinity moderates ($p = .067$). Approximately 69 percent of idealists and 76 percent of moderates reported having a prostate exam ($p = .034$); 57 percent of

Table 2. Logistic Regression Analyses of an Annual Physical Examination, Prostate Examination, Flu Shot, and Compliance with All Three Services, by Hegemonic Masculinity

	Physical Examination		Prostate Examination		Flu Shot		Compliant with All Three Services	
	OR	95 percent CI	OR	95 percent CI	OR	95 percent CI	OR	95 percent CI
Hegemonic masculinity	.74*	.54, 1.00	.71*	.52, .96	.76^{+}	.57, 1.01	.54***	.40, .72
Childhood context								
Mother's education	1.03	.97, 1.09	1.01	.96, 1.08	.98	.93, 1.04	1.02	.96, 1.07
Father's education	.98	.93, 1.02	.97	.92, 1.02	1.05^{+}	1.00, 1.09	.99	.95, 1.04
Farm background	1.12	.76, 1.63	1.08	.74, 1.58	.66*	.47, .92	.75	.53, 1.06
Employed mother	1.08	.80, 1.46	1.27	.94, 1.73	.88	.67, 1.16	1.06	.81, 1.39
Adult context								
Age	1.16	.92, 1.46	.99	.78, 1.25	1.27*	1.02, 1.57	1.13	.91, 1.39
Married	1.10	.71, 1.69	1.25	.82, 1.92	1.64*	1.11, 2.43	1.45^{+}	.97, 2.17
Self-reported health	.80^{+}	.63, 1.01	.93	.74, 1.18	.60***	.48, .75	.80*	.64, .99
Employed	.75^{+}	.56, 1.01	.73*	.54, .98	.70*	.54, .92	.72*	.55, .94
Socioeconomic status								
College degree	1.37^{+}	.96, 1.97	1.26	.88, 1.81	1.74**	1.25, 2.42	1.65**	1.20, 2.27
Household income[a]	1.02	.99, 1.04	1.00	.97, 1.03	1.04**	1.01, 1.07	1.02+	1.00, 1.05
Wealth[a]	1.00	1.00, 1.00	1.00	1.00, 1.00	1.00	1.00, 1.00	1.00	1.00, 1.00
Occupational education	.98	.87, 1.11	1.03	.91, 1.17	1.00	.90, 1.12	.94	.84, 1.05
N	1,045		998		1,049		993	
Pseudo R^2	.016		.016		.059		.038	
χ^2; *df*	18.46; 13		18.10; 13		82.63; 13		52.29; 13	

Notes: OR = odds ratio; CI = confidence interval.

[a]Income and wealth are measured in $10,000s in the regression models to assist with interpretation. For example, each $10,000 increase in household income is associated with 4 percent increase in the likelihood of obtaining a flu shot.

$^{+}p < .10$; $*p < .05$; $**p < .01$; $***p < .001$.

idealists and 64 percent of moderates reported receiving a flu shot ($p = .031$). A notable finding is the lack of comprehensive preventive care for all men. Specifically, only 35 percent of idealists and 50 percent of moderates reported obtaining all three services in the last 12 months ($p < .001$).[6]

Masculinity and Preventive Health Care Seeking

Table 2 provides the multiple logistic regression results of strong masculinity beliefs predicting each outcome. Strong endorsement of hegemonic masculinity predicted significantly lower compliance with obtaining a preventive physical exam, a prostate exam, and all three services—but only marginally predicted obtaining a flu shot.[7] Hegemonic masculinity idealists were 26 percent less likely than moderates to obtain a physical exam in the last 12 months, 29 percent less likely to obtain a prostate exam in the last 12 months, and 46 percent less likely to obtain all three preventive services in the last 12 months—net of all other variables. In other words, men with the greatest subscription to hegemonic masculinity ideals had half the odds (compared to masculinity moderates) of following medical advice for preventive health care, regardless of family background, demographics, prior health, or SES.

Few other variables were significant. In some models farm background, age, marital status, prior health, employment status, education, and household income were statistically significant predictors of preventive health care. These variables performed as expected with household income, being married, being older, and having a college degree associated with an increased odds of obtaining preventive health services in the last 12 months. In contrast, farm background, prior

Table 3. Logistic Regression Analyses of an Annual Physical Examination, Prostate Examination, Flu Shot, and Compliance with All Three Services by Interactions of Hegemonic Masculinity and Socioeconomic Status (SES)[a]

	Physical Examination (*N* = 1,045)		Prostate Examination (*N* = 998)		Flu Shot (*N* = 1,049)		Compliant with All Three Services (*N* = 993)	
	OR	95 percent CI	OR	95 percent CI	OR	95 percent CI	OR	95 percent CI
Education model								
Hegemonic masculinity	.80	.55, 1.17	.98	.67, 1.44	.79	.56, 1.11	.71^{+}	.50, 1.02
Bachelor's degree	1.49^{+}	.99, 2.25	1.73*	1.13, 2.64	1.81**	1.24, 2.63	2.05***	1.43, 2.94
Masculinity × Bachelor's Degree	.76	.40, 1.46	.37**	.19, .71	.87	.47, 1.61	.44**	.23, .81
Pseudo R^2	.016		.024		.059		.043	
Occupational education model								
Hegemonic masculinity	.84	.60, 1.17	.82	.59, 1.14	.77^{+}	.57, 1.05	.63**	.46, .86
Occupational education	1.07	.92, 1.24	1.15^{+}	.99, 1.33	1.02	.89, 1.16	1.03	.90, 1.16
Masculinity × Occupational Education	.78*	.63, .97	.74**	.59, .92	.96	.78, 1.17	.72**	.58, .90
Pseudo R^2	.020		.022		.059		.045	
Household income model								
Hegemonic masculinity	.80	.50, 1.28	1.37	.85, 2.21	.83	.54, 1.28	.83	.53, 1.28
Household income	1.02	.99, 1.05	1.03^{+}	1.00, 1.07	1.04**	1.01, 1.07	1.04**	1.01, 1.07
Masculinity × Household Income	.99	.95, 1.03	.92***	.88, .96	.99	.95, 1.03	.95*	.91, .99
Pseudo R^2	.016		.028		.059		.043	
Wealth model								
Hegemonic masculinity	.90	.60, 1.35	1.11	.73, 1.67	.90	.62, 1.31	.85	.57, 1.25
Wealth	1.00	1.00, 1.00	1.00*	1.00, 1.01	1.00	1.00, 1.00	1.00	1.00, 1.00
Masculinity × Wealth	1.00	.99, 1.00	.99**	.99, 1.00	1.00	.99, 1.00	.99**	.99, 1.00
Pseudo R^2	.018		.025		.061		.047	

Notes: OR = odds ratio; CI = confidence interval.

[a]Models include controls for childhood context (farm background, mother's education, father's education, mother's employment status) and adult context (age, education, self-reported health, marital status, employment status, occupational education, household income, wealth). Income and wealth are measured in $10,000s to assist with interpretation.

$^{+}p < .10$; $*p < .05$; $**p < .01$; $***p < .001$.

self-reported health, and employment status predicted a decrease in the odds of obtaining some preventive services in the last 12 months. The inverse relationship between prior self-reported health and health care seeking is not surprising because healthy people may feel less need to make preventive health care visits. The inverse relationship between employment status and health care seeking seems counterintuitive at first, but makes sense given that the models account for other SES measures and over 98 percent of the men have health insurance.[8] Specifically, because the SES benefits of employment are already accounted for in these models, being currently employed affects health care seeking through limiting the time available for health promotion (results available upon request). In sum, the results provide consistent evidence that strong endorsement of hegemonic masculinity ideals reduces men's engagement in preventive health care.

Masculinity, Socioeconomic Status, and Preventive Health Care Seeking

The results in Table 3 demonstrate that strong endorsement of hegemonic masculinity differentially influences health care seeking, dependent on SES. Specifically, strong endorsement of masculinity ideals significantly interacted with education,

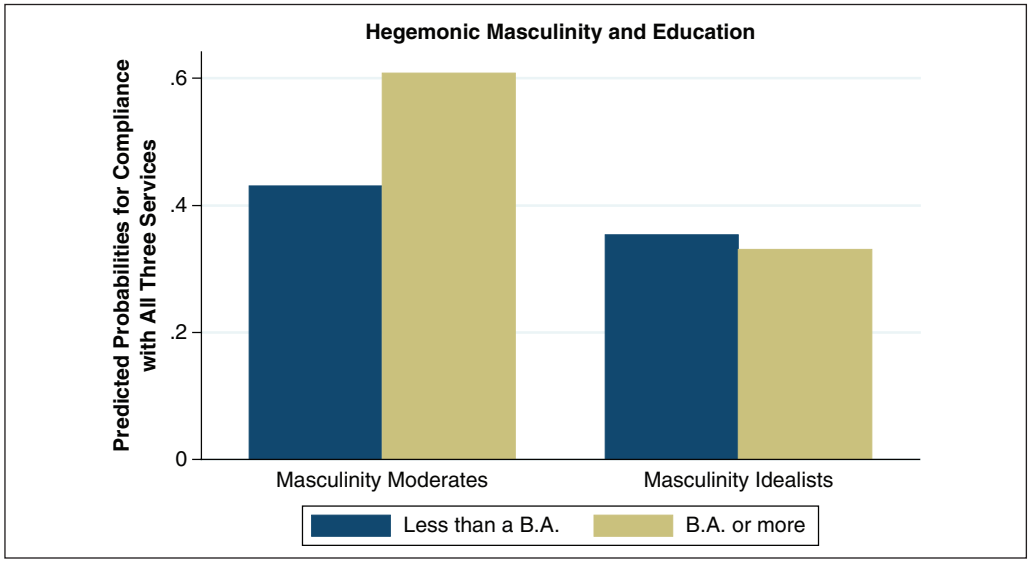

Figure 1. Compliance with Preventive Health Recommendations

occupational education, household income, and wealth to predict prostate exams and compliance with all three services; strong endorsement of masculinity also interacted with occupational education to predict a general physical examination. In each case, the odds ratio for the interaction was less than one, indicating that masculinity endorsement weakened the health-promoting effect of higher SES and that higher SES exacerbated the adverse health effect of masculinity endorsement.[9]

Figures 1 and 2 show predicted probabilities of masculinity moderates and idealists obtaining all three preventive services by education (Figure 1) and occupational education (Figure 2), with all other variables set at their means.[10] As portrayed in Figure 1, masculinity idealists had a lower predicted probability (compared to masculinity moderates) of obtaining all three preventive services in last 12 months, regardless of education. Furthermore, although masculinity moderates benefited from higher education, the same was not true for masculinity idealists. Masculinity moderates with high education had .61 probability of obtaining all three preventive services, compared to masculinity idealists with high education who had about half the probability (.33) of similarly educated masculinity moderates.

As demonstrated for compliance with all three preventive services (Figure 2), masculinity moderates and masculinity idealists also responded differently to increasing occupational status. Masculinity moderates had a slight increase in the probability of obtaining all three preventive services as their occupational status increased, consistent with the SES gradient in health (Adler et al. 1994). However, idealists exhibited a more dramatic—and counterintuitive—relationship between occupational status and health care seeking. Specifically, masculinity idealists had a rapidly decreasing probability of complying with preventive medical recommendations as their occupational status increased. In other words, the SES gradient in health was reversed among this group of men who strongly endorsed hegemonic masculinity ideals. As a comparison, masculinity moderates in high-status positions had about a .52 probability of having obtained all three services in the last year, compared to only a .14 probability for masculinity idealists in similar occupations. The results provide strong evidence that the health-promoting influence of SES is dramatically attenuated—or even reversed—by strong subscription to masculinity ideals.

DISCUSSION

Researchers have long sought to understand the persistent puzzle of why men—compared to women—have shorter life spans and higher rates for many leading preventable diseases. We find strong evidence that endorsement of hegemonic masculinity ideals is one core cause of men's poorer health—at least as indicated by reduced compliance with preventive health care. Furthermore, we document that the relationship between masculinity and

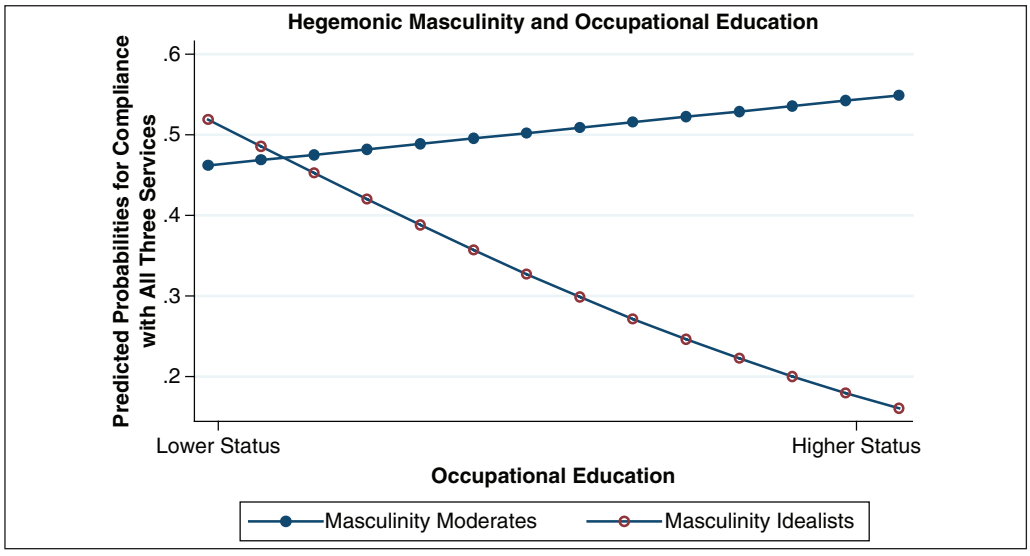

Figure 2. Compliance with Preventive Health Recommendations

health behaviors varies by SES; men who strongly endorse hegemonic masculinity ideals do not receive a health benefit (in terms of preventive health care compliance) from higher SES—and may in fact be harmed by increases in SES.

The baseline finding that endorsement of masculinity beliefs harms men's health in a population-based sample of older men provides strong validation for prior research based on small, qualitative, and/or clinical samples (Courtenay 2000; O'Brien et al. 2005). The findings also support the hypothesis that aging hegemonic idealist men may enact masculinity through exerting independence and self-reliance by *not* going to the doctor (Calasanti 2004). Furthermore, the relatively consistent effects across outcomes suggest that the harm of masculinity beliefs is not limited to male-specific outcomes; the most adverse effect of masculinity on health care seeking can be seen when examining compliance with multiple services. Furthermore, accounting for masculinity ideals brings the rate of men's preventive health care seeking more in line with women's preventive health care seeking—suggesting that masculinity ideals are one cause of the gender gap in preventive care.

Masculinity, Socioeconomic Status, and Preventive Health Care Seeking

Our interaction results indicate that if we only looked at the main effects of masculinity *or* only the main effects of SES, we would have misspecified the causes of men's lower preventive health care seeking. Indeed, the results show that masculinity is not equally harmful for all men and that higher SES is not equally beneficial for all men. Contrary to the well-established SES gradient in health, higher levels of SES did not predict more health care seeking for men with strong masculinity beliefs. Furthermore, when combined with strong masculinity beliefs, higher levels of SES were actually dangerous for men's health. These findings provide strong empirical evidence that masculinity ideals are an important countervailing mechanism that should be incorporated into future research using the theory of fundamental causes.

The exact mechanisms underlying these trends are unclear and require further exploration. It is plausible that increased occupational status among masculinity idealists inhibits health care because higher status men do not want to feel emasculated by placing themselves in the subordinate position of patient (Courtenay 2000). It is also plausible that masculinity idealists with more education, occupational status, income, and/or wealth postpone or forgo preventive health care services because they have the resources to remedy problems that might result from not seeking preventive care. In addition, the findings fit well with research suggesting that higher SES older men may be particularly prone to enact masculinity through exercising independence by not seeking health care (Calasanti 2004). It is important to underscore the fact that we controlled for baseline health to help rule out the possibility that higher SES men have better health and therefore are less likely to visit the doctor. In sum, although our research adds a

crucial piece of information to literature on health inequalities, gender, and SES, it is essential for future research to explicate mechanisms linking class-based masculinities to men's health.

It is also worth noting two differences in the interaction results based on the type of SES measured. First, unlike the other SES measures—the education and masculinity interactions only showed that higher education did not benefit masculinity idealists—we did not find that higher education harmed idealists. This difference could be due to the fact that the social significance of education is not accrued in a linear/continuous fashion, but rather at credentialing points such as a bachelor's degree. Sensitivity analyses do show that the few masculinity idealists with a graduate degree had a much lower likelihood of obtaining preventive health care than idealists with less education—suggesting that the education and masculinity interactions may look more similar to the other SES interactions as educational attainment continues to increase.

Second, only the occupational education interaction suggests that some masculinity idealists had higher levels of preventive health care seeking. Indeed, this manuscript corroborates qualitative findings that masculinity can promote health care seeking among men in lower status, stereotypically male jobs (O'Brien et al. 2005). However, only a few men comprise this small uptick of increased preventive care and we therefore further assessed the results by examining the interaction of masculinity beliefs with measures of blue-collar, service sector, and white-collar jobs. These results are consistent with the finding that masculinity idealists with higher SES (white-collar job) have comparatively low levels of preventive health care seeking. However, these broader categorizations of occupational status did not provide evidence for an increase in preventive care among masculinity idealists in blue-collar jobs. Taken together, these results suggest that the slight uptick in preventive care for low-occupational status masculinity idealists needs to be further explored in a sample not limited to high school graduates in order to increase the number of men in very low status occupations.

Limitations and Future Directions

As with all research, our project is not without limitations. Several limitations result from the fact that our sample is comprised of older (65 years old), white, high school–educated men who were healthy enough to live until age 65. The older age of the sample is a notable limitation. This generation of men came of age during one of the most gender-differentiated eras in recent history (1950s) and, in general, have stronger masculinity beliefs than newer generations of men (Bolzendahl and Myers 2004; Brewster and Padavic 2000). However, masculinity beliefs are not disappearing. Rather, the percentage of men within cohorts who support more "traditional" gender ideals plateaued in the 1990s and showed an uptick in conservative views starting in 2000s (Brewster and Padavic 2000).

Taken together, this information suggests that the adverse relationship between hegemonic masculinity ideals and preventive health care seeking may be relevant for newer cohorts of men; however, fewer men will be affected. Furthermore, aging is associated with increasingly "traditional" gender beliefs, regardless of cohort (Bolzendahl and Myers 2004; Brewster and Padavic 2000). Therefore, these newer cohorts of men will likely become more "traditional" as they age and therefore may experience greater adverse health effects of masculinity than would be expected based on their young and/or midlife masculinity ideals. Nonetheless, the degree to which the results are generalizable to younger men or future cohorts of older men remains an open empirical question.

In terms of generalizability of the SES/masculinity interactions, it is important to assess the implication of changes in the U.S. economy. For example, the current trend toward a service economy predicated on high levels of education and training could indicate that more men will be in higher SES categories and therefore experience reduced health care seeking associated with strong masculinity ideals (Lee and Wolpin 2006). Furthermore, the current recession has been particularly difficult for men's employment—so much so that it has been dubbed the "man-cession" (Wall 2009). Prior research has shown that men's unemployment and underemployment can trigger masculinity enactments, including risky health behaviors, to compensate for the masculinity insult of not being the breadwinner (Wadsworth, Montgomery, and Bartley 1999). It is therefore plausible that unemployed or underemployed men will enact masculinity through health care avoidance. In sum, current economic changes could mean that men are more likely to enact hegemonic masculinity than expected based solely on their age and cohort. This is an empirical question that needs to be assessed, but does show how changing economic and social structures shift the context in which to consider generalizability.

The sample analyzed is also limited in terms of racial/ethnic and educational diversity. Specifically, the sample is almost completely white and everyone—by design—has at least a high school education. Prior qualitative research suggests that African American and Hispanic men who have strong beliefs in hegemonic masculinity ideals may resist or delay health care to preserve masculine status—therefore, the main effects of masculinity found in this project likely apply to other race/ethnic groups (Bates, Rankin-Hill, and Sanchez-Ayendez 1997; Rose et al. 2000). Although unstudied, there is no particular reason to believe that the pattern of SES/masculinity interactions and preventive health care will vary by race/ethnicity. However, given the lower pay and more limited occupational prospects for minority men in the United States, it is possible that future research will not find the most extreme effects of health care avoidance for the very high SES men with high masculinity beliefs (Williams 2003). In terms of education—because the sample is limited to high school graduates, as noted previously, our findings may underrepresent men with lower occupational status and strong masculinity beliefs who experienced a slight increase in the predicted probability of obtaining preventive services.

A final limitation of the sample suggests that the adverse effect of masculinity ideals might be a conservative underestimate of the true effect. Given the negative association between masculinity ideals and men's health, it is likely that some of the sickest men with the strongest masculinity beliefs were too sick to participate in 2004 or died prior to age 65, resulting in a sample consisting of a healthier group of men with weaker masculinity ideals. Given this selection, it is likely that the current results are an underestimate of the true adverse effect of masculinity ideals on preventive health care seeking.

Although the sample poses some concerns for this project, the relatively homogenous sample provides an excellent opportunity to explore multiple masculinities. Specifically, the fact that SES dramatically changes the effect of masculinity on health care seeking among a sample of men who are otherwise very similar in terms of age, race, and educational status shows that variations in even one other social structural location (i.e., SES) can profoundly affect the influence of masculinity ideals. This finding underscores the importance of examining multiple and context-dependent masculinities (Connell 1987; Courtenay 2000).

In addition to sample limitations, one additional concern is that masculinity ideals and preventive health care are measured contemporaneously. Therefore, this project implicitly assumes that endorsement of masculinity at 65 is relatively stable and exists prior to the measured preventive health care behaviors. The major concern with this limitation is whether access to health care services influences reports of masculinity ideals, thereby making the causal relationship from preventive care access to masculinity—rather than from masculinity ideals to preventive care, as articulated here. This issue is less concerning given the use of a dichotomous indicator of strong masculinity ideals because it is unlikely that masculinity beliefs would change from extreme to moderate (or vice versa) during the few years prior to ascertainment.

In conclusion, we found that subscription to hegemonic masculinity ideals affects older men's preventive health care seeking even after controlling for family background, demographic characteristics, prior health, and an array of socioeconomic variables. Furthermore, the results demonstrate that masculinity ideals affect men's preventive health care seeking dependent on their socioeconomic status. The vast majority of masculinity idealists had lower levels of seeking preventive care and these already low levels decreased with increasing occupational status, income, and wealth. These anomalous SES/health findings may provide insight into the persistent gender paradox in health, whereby men have a lower life expectancy at birth despite having more socioeconomic resources than women. These results suggest that this paradox may be partly driven by high status men who believe strongly in masculinity ideals, rather than by all men with high SES. However, this hypothesis will require further empirical investigation. Nonetheless, the findings underscore the importance of incorporating gendered concepts into population health research; otherwise, scholars will miss an important and potentially modifiable health determinant, and render invisible a surprisingly vulnerable group of high SES men.

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NOTES

1. The masculinity items were administered to 1,541 men; 1,449 men completed all masculinity items. To assure that missing data were not driving our results, we replicated the results using Stata multiple imputation procedures including ICE and MI (Royston 2005; Rubin 1987).
2. There is some controversy about the necessity of annual physical exams and regular prostate screens. However, there was much less controversy during the time period studied in this article (2003-2004), and even now, health providers routinely recommend and order yearly physicals and prostate screens for men older than 50 (Lane 2002; Prochazka et al. 2005; Voss and Schectman 2001). Furthermore, these specific services are likely good indicators of general preventive health care seeking.
3. The results were similar when including children as a control variable. However, because most of the respondents' children are adults, we elected not to include the variable.
4. For example, it is much more likely that current marital status (i.e., wives' encouragement to seek preventive care) rather than marital status 10 years prior would affect health care seeking.
5. Current employment status is a control variable rather than an SES indicator because we directly measure SES flexible resources (i.e., education, income, occupational status, and wealth).
6. As a sensitivity test, we assessed whether women with high (top 25 percent) masculinity ideals (idealists) were less likely to seek preventive care. If both men's and women's preventive health care seeking is harmed by hegemonic masculinity beliefs, this would suggest that a "traditional" view of gender is harmful for everyone, rather than pointing to a male-specific masculinity effect. However, the sensitivity tests show that masculinity idealist women and masculinity moderate women did not differ significantly in their receipt of annual exams, flu shots, mammograms, or all three services—even controlling for all other variables.
7. We conducted sensitivity tests with other cutpoints and the results fit well with the current findings.
8. Because so few men (1 percent) were uninsured, it was not possible to include health insurance in all models. However, as a sensitivity test, we restricted the analyses to respondents who had health insurance and found virtually the same results.
9. We conducted sensitivity tests of interactions with masculinity coded as 1 for the bottom 25th percentile and found similar trends—but the interactions were not significant. The nonsignificance of these interactions underscores that the combination of high status *and* high masculinity beliefs is most harmful for preventive health care seeking.
10. The figures for wealth and income are nearly identical to that for occupational education with the exception that masculinity idealists' predicted probability of compliance with all three services never exceeds that of masculinity moderates.

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