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Harnessing Social Norms to Increase Men's Interest in HEED Careers

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Harnessing Social Norms to Increase Men's Interest in HEED Careers

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
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Abstract

Men's underrepresentation in the female-dominated domains of healthcare, early education, and the domestic sphere, or HEED roles, remains a persistent problem despite the fact that such careers often afford more job security and wage growth than blue-collar work. A growing body of evidence suggests that their lack of participation in HEED roles is not merely due to a skills mismatch, but rather an identity mismatch. I hypothesized that using descriptive and injunctive norms to reframe a stereotypically feminine career as more compatible with manhood could effectively reduce this identity mismatch. More specifically, I predicted that using a dynamic descriptive norm framing that highlighted the growing number of men taking on a female-dominated career and an injunctive norm framing that highlighted its compatibility with men's gender rules would increase men's interest in the occupation. Furthermore, I believed that such framings would be particularly effective among men who are highly communal and those who do not strongly endorse traditional male role norms. To test my predictions, 342 men took part in an online study in which they were assigned to read a newspaper article about a HEED role, nursing, that was designed to manipulate the perceived prevalence of male nurses and the job's compatibility with male gender rules. Then, they completed a variety of measures designed to assess their interest in and perceptions of nursing and other HEED careers. Minimal support was found for my hypotheses, and I discuss limitations and future directions to shed light on these null results.

Introduction

Buoyed by soaring stock indices and declining unemployment rates, United States citizens today are reportedly more satisfied with the national economy than they have been since the beginning of the 2008 financial crisis (Stokes, 2017). Unfortunately, these promising metrics mask an invisible crisis: the share of American men between the ages of 25 and 54, or "prime-age men," in the labor force has been on the decline for more than sixty years (Executive Office of the President of the United States Council of Economic Advisers, 2016). Their falling labor force participation rate, which dropped from a peak of 98 percent in 1954 to just 88 percent today, means that there are currently about seven million prime-age men in the United States who are not working or looking for work. Although this alarming trend cannot be attributed to any individual cause, it corresponds with the decline of jobs traditionally taken on by men (e.g., factory work) and the rise of new service-sector careers, especially healthcare jobs, that are currently dominated by women (United States Bureau of Labor Statistics, 2015). Taken together, the falling male labor force participation rate and the marked gender disparity in these promising fields suggest that many men are trapped in "retrospective wait unemployment" – they continue to look for work that is becoming obsolete, thereby failing to adjust to an economy in which stereotypically feminine work is associated with more job security and wage growth than blue-collar work (Dill, Price-Glynn, & Rakovski, 2016; Katz, 2014). This experiment tests whether normative social influence techniques, namely the manipulation of descriptive and injunctive norms, can help to free men from this trap by effectively reframing female-dominated careers as more compatible with manhood.

Despite its economic ramifications, men's persistent lack of representation in the female-dominated domains of healthcare, early education, and the domestic sphere, or HEED roles, remains a static problem (Croft, Schmader, & Block, 2015). The paucity of men working to deliver care, compassion, and support to others is pervasive and extends from the workplace to the home. For instance, only about 13% of all nurses within the United States are men, and men still fail to take on equal shares of household and caregiving responsibilities even as greater percentages of them exit the workforce (Munnich & Wozniak, 2017; Pew Research Center, 2014). Due to the scope of this problematic underrepresentation, men's further engagement in these roles would have a number of societal benefits.

The most obvious of these benefits is that more men would be gainfully employed, thereby improving their economic prospects and those of their families (Dill et al., 2016; Executive Office of the President of the United States Council of Economic Advisers, 2016). However, there are many other positive outcomes that are less evident; for example, increasing the number of male elementary educators would heighten school-aged boys' exposure to positive and diverse male role models (Sevier & Ashcraf, 2009; United States Bureau of Labor Statistics, 2014). On another note, more egalitarianism in the home would open the door for men to experience the positive psychological outcomes that are related to caregiving while simultaneously relieving women of some of the domestic burdens that they tend to shoulder (Duckworth & Buzzanell, 2009; Fischer & Anderson, 2012). Fathers who are highly involved in their children's care feel less strain in their family role performance, and evidence indicates that this high involvement has a positive impact on men's career success, marriages, and generativity (Lamb, 2004). The lopsided allocation of unpaid family work disadvantages women who pursue

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career opportunities and advancement, so correcting this imbalance would also indirectly foster more gender equality in the workplace (Lachance-Grzela & Bouchard, 2010).

Because there are abundant and diverse incentives for promoting men's involvement in these roles alongside continuing efforts to improve women's access to male-dominated careers, the aim of this thesis is to harness the power of social norms to increase men's willingness to engage in stereotypically feminine roles and behaviors. This experiment specifically tests whether using methods drawn from social-norms marketing campaigns to reframe a HEED role – namely, the career of nursing – can augment men's endorsement and positive perceptions of it, their broader interest in HEED-related careers, and their views that these careers would fulfill their personal goals, a first step in determining if such techniques can be used to effect behavioral changes in related domains. To be effective, these techniques must account for and counteract the cultural and psychological barriers that contribute to men's underrepresentation in HEED roles.

Cultural and Psychological Barriers

There is no single force driving men's underrepresentation in HEED roles, but a constellation of cultural and psychological factors certainly exacerbates the problem. One barrier to men's participation in these roles is the prevalence of cross-cultural gender stereotypes. According to social role theory, stereotype content is shaped by repeated observations of members of different social groups engaging in role-linked activities (Koenig & Eagly, 2014). A person who exclusively witnesses women taking care of children might thereby come to assume that women are naturally more inclined to be warm and nurturing. Men have occupied independent, competitive roles throughout history, whereas women have traditionally been relegated to lower-status roles involving the cultivation of relationships (Fiske, Cuddy, Glick, &

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Xu, 2002). As a result, masculinity has been systematically linked with *agency*, which refers to a striving for self-growth and self-interest, whereas femininity has become associated with communion, which refers to the desire to closely relate to and cooperate with others (Bakan, 1966; Fiske et al., 2002). In the gender literature, agency and communion are sometimes even equated with masculinity and femininity, respectively (Eagly & Wood, 2017).

Yet gender stereotypes are not just descriptive. They additionally consist of rules governing how men and women ought to behave, *prescriptions*, and how they ought not to behave, *proscriptions* (Eagly & Karau, 2002; Prentice & Carranza, 2002). Masculinity is not merely associated with agency: men are expected to display high-status, agentic traits (e.g., assertiveness) and to avoid exhibiting status-attenuating traits that are considered permissible for women (e.g., weakness; Moss-Racusin, Phelan, & Rudman, 2010; Rudman, Moss-Racusin, Phelan, & Nauts, 2012). Nor is femininity merely associated with communion: women are expected to demonstrate communal traits (e.g., sensitivity to others), which are relatively status-neutral, and to eschew status-enhancing traits that are reserved for men (e.g., aggressiveness).

These gender rules impede the modification of stereotype content. Social role theory posits that people must repeatedly observe counterstereotypic examples across diverse contexts for stereotype content to change, but individuals who do not abide by gender prescriptions and proscriptions often face repercussions for their nonconformity. Considerable research finds support for the status incongruity hypothesis, which holds that individuals who violate gender rules risk social and economic backlash because they threaten the gender hierarchy (Moss-Racusin et al., 2010; Rudman et al., 2012). Fear of backlash provoked by the violation of these prescriptions and proscriptions thus perpetuates traditional gender stereotypes and labor divisions.

As female vanguards continue to break into stereotypically masculine roles – risking this backlash to ultimately improve their prospects – results show that women are progressively being seen and seeing themselves as agentic. In fact, by 1995, women were just as likely as men to rate themselves in agentic terms (Twenge, Campbell, & Gentile, 2012). Men, on the other hand, continue to rate themselves as less communally-oriented than women. In fact, their tendency to dissociate themselves from communion is pervasive. For example, there are also differences in the extent to which men and women endorse communal and agentic goals (Trapnell & Paulhuss, 2012). Men and women rate the importance of agentic goals in a similar manner, but men do not value communal goals as highly as do women (Diekman, Clark, Johnston, Brown, & Steinberg, 2011; Diekman, Weisgram, & Belanger, 2015; Evans & Diekman, 2009). And although people project that women will continue to accrue agency across time, they anticipate that men will still be perceived as more agentic and less communal than women in the decades to come (Diekman & Eagly, 2000; Diekman, Goodfriend, & Goodwin, 2004). Women seem to be increasingly willing to defy their aforementioned proscriptions, so why is it that men continue to distance themselves from status-neutral communal traits, goals, and roles that should not put them at risk of violating male gender rules? By examining it through the lens of precarious manhood research, their reluctance might be better understood.

The concept of precarious manhood centers on the idea that manhood is seen as a precarious social status that is difficult to establish and can be easily lost (Bosson & Vandello, 2011; Vandello, Bosson, Cohen, Burnaford, & Weaver, 2008; Vandello & Bosson, 2013). Men must regularly and publicly demonstrate their manhood to maintain their gender status, which can be threatened by a number of social transgressions. Exhibiting stereotypically feminine behaviors and roles poses a threat to men's manhood and is therefore anxiety-provoking. It

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could be that men are reluctant to value communion because its association with femininity across history might also trigger these feelings of threat. If so, men will then feel pressured to avoid roles linked with femininity and communion (e.g., HEED careers) to preserve their manhood. Unfortunately, these circumstances produce a self-reinforcing feedback loop: as very few men are willing to engage in these communal roles because of their perceived femininity, their association with femininity remains strong and threatening. The precariousness of manhood and the pervasiveness of gender rules thus impede men's participation in HEED roles because they heighten their concern with adhering to rigid social norms. Unfortunately, prior attempts to make gender-disparate domains seem more appealing to members of underrepresented groups, which I review below, have had mixed success. I believe that one reason why past efforts have not been more effective is due to their oversight of the literature on social-norms marketing campaigns. Prior to developing and testing methods to overcome these psychological barriers to men's participation in HEED roles, it is crucial to know the circumstances under which people are likely to modify their behaviors.

Prior Methods Aimed at Addressing Underrepresentations

Research on goal congruity theory, which posits that men and women often pursue different social roles because they tend to internalize different traits and goals, has spurred the development of methods aimed at increasing men's and women's engagement in gender-disparate domains (Diekman, Brown, Johnston, & Clark, 2010). People believe that female stereotypic careers, relative to male stereotypic and STEM careers, are better able to facilitate the achievement of communal goals that are not as highly valued by men. Furthermore, communally-oriented individuals, regardless of their gender, are also more likely to value HEED careers (Diekman et al., 2010). As such, researchers have attempted to increase men's interest in

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HEED careers by activating male participants' communal goals (e.g., by having them rate the importance of communal goals or write essays about a time that they failed to act communally; Block, 2013; Diekman et al., 2011). However, tests of this communal goal activation strategy have largely failed to find support for this hypothesis, thereby highlighting how tough it is to change men's goals due to their connection with men's gender rules and precarious manhood.

On the other side of the coin, researchers hypothesize that women's underrepresentation in science, technology, engineering, and mathematics, or STEM fields, can be partially attributed to the perception that these careers are incompatible with communion, which is at the heart of women's prescribed traits and goals. STEM careers are, in fact, rated as less compatible with communal goals, but reframing a science career as communal successfully increased women's interest in the career (Diekman et al., 2010; Diekman et al., 2011). Therefore, reframing a gender-disparate role so that it appears to mesh with the gender rules of the underrepresented group may be a more successful method than attempting to modify the traits and goals of those in the underrepresented group. Yet men are not only reluctant to engage in HEED roles because they perceive them as less compatible with their gender rules; the fact that women disproportionately occupy these roles also signals that they pose a threat to manhood. Taking each of these concerns into account, the utility of this role reframing method can be explained and even enhanced by the extant literature on normative social influence and social-norms marketing campaigns. This literature provides insight into how behaviors can be modified by presenting information about their prevalence and their cultural acceptability to targets. More comprehensive reframing techniques that can harness the power of these social norms should thus be better able to augment men's interest in, and positive perceptions of, HEED roles.

Normative Social Influence and Social-Norms Marketing Campaigns

People's subjective perceptions of community norms guide their daily behaviors, and individuals are motivated to adhere to such norms to feel a sense of belongingness, to have an accurate understanding of social situations, and to avoid social rejection (Cialdini & Goldstein, 2004). Importantly, such perceptions shape people's actions even when they are inaccurate. Social-norms marketing campaigns often seek to change behaviors by correcting people's skewed perceptions of *descriptive* norms – that is, information about the prevalence of behaviors (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). For example, young men and women in the United States tend to overestimate the amount of alcohol that their peers drink, so health initiatives on college campuses often attempt to reduce binge drinking rates by educating students about accurate drinking norms. However, correcting misperceptions about the number of men engaging in HEED roles – for example, disseminating fliers stating that less than 3% of kindergarten teachers currently working in the United States are men – would probably not motivate more men to become early child educators. The challenge in using descriptive normative information in efforts to address men's underrepresentation in HEED roles is that there are, in fact, very few men filling these roles today. This information could reinforce how unusual or even socially deviant these roles are for men. The question remains: how can social change be stimulated in cases where accurate perceptions of descriptive norms might actually exacerbate the issue?

It turns out that people are not just sensitive to the current status of norms; in fact, they sometimes anticipate changes in norms and respond by conforming to these emerging realities (Paluck, 2009). Recent findings suggest that counternormative behavior is more strongly facilitated by descriptive normative information that emphasizes the change of norms over time

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(*dynamic* descriptive norms) compared with descriptive normative information that focuses on the current state of norms (*static* descriptive norms) (Sparkman & Walton, 2017). For example, participants exposed to information emphasizing Americans' increasing (dynamic) efforts to reduce their high levels of meat consumption, a widely accepted yet unsustainable behavior, were more likely to express interest in eating less meat and choose to eat a meatless lunch compared with those exposed to information about the current (static) percentage of Americans attempting to reduce their meat consumption (Sparkman & Waltman, 2017). Why did the dynamic descriptive norms have this effect? Relative to the static descriptive norms, they increased the extent to which participants perceived the targeted behavior to be important to other people and also facilitated participants' ability to anticipate changes in their world (preconformity). Therefore, it seems that emphasizing the growing number of men taking on HEED roles would be a more successful approach than informing individuals about the current number of men engaging in them.

Although there is promising research on the power of dynamic descriptive norms, evidence suggests that social-norms marketing campaigns that only employ descriptive normative information are sometimes ineffective and even backfire (Perkins, Haines, & Rice, 2005). Research on normative social influence, or social influence leading to conformity, sheds light on why this unanticipated backfiring occurs and how it can be prevented. When targets are presented with information about the prevalence of a behavior, they measure the appropriateness of their own behavior by determining how far away they are from the norm (Schultz et al., 2007; Schultz, Khazian, & Zaleski, 2008). Descriptive normative information embedded in campaigns aimed at fostering desirable behaviors may effectively increase them among individuals who perform them at a rate below the norm; however, these messages sometimes lead to unintentional

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decreases in these desirable behaviors among individuals who discover that they perform them at a rate above the norm, or boomerang effects (Schultz et al., 2007). For example, merely informing people that they conserved more household energy than their neighbors led them to consume more energy in the future (Schultz et al., 2007). Furthermore, boomerangs tend to occur among individuals who are most likely to engage in the targeted undesired behavior (Bosson, Parrot, Swan, Kuchynka, & Schramm, 2015).

Boomerang effects produced by these social-norms marketing campaigns can be counteracted by the addition of *injunctive* normative information – messages about the extent to which a behavior is approved or disapproved within a culture (Schultz et al., 2007; Schultz et al., 2008). Learning that they conserved less household energy than their neighbors led people to consume more energy in the future, but when they also received an injunctive message of approval alongside this descriptive normative information, they continued to consume energy at the desirable low rate and did not regress to the mean (Schultz et al., 2007). Presenting these individuals with rewarding evaluative feedback about their behavior relative to the norm thus encouraged them to keep using less household energy (Tankard & Paluck, 2016). Gender stereotypes have strong injunctive content that maps onto the proscriptive and prescriptive gender rules described earlier. Because women's interest in a male-dominated STEM career increased when the communal aspects of the role were emphasized, there is preliminary evidence that a gender-disparate role is more likely to be endorsed by members of the underrepresented group when it is framed as compatible with their injunctive gender norms. Socially approved behaviors for men convey traits of agency; in other words, men should be assertive, heroic, competent leaders. Thus, I predict that the most effective efforts to increase men's interest in

and positive perceptions of HEED roles will use dynamic descriptive norms alongside an injunctive framing that emphasizes the role's compatibility with male agency.

Current Research

This experiment seeks to incorporate established normative social influence techniques into the creation of a useful, feasible reframing method that can augment men's endorsement and positive perceptions of stereotypically feminine HEED roles. Consequently, I will use descriptive and injunctive normative information to manipulate the framing of a female-dominated career, nursing, and then will measure male participants' interest in and perceptions of nursing, their broader interest in HEED-related careers, and their perceptions that these careers would fulfill their personal goals (i.e., the goal affordance of the careers).

Although the profession of nursing requires agency and has had men in its ranks since its inception, this career has and continues to be equated with femininity and communion (Evans, 2004; O'Connor, 2015). Since 1960, the percentage of male nurses in the United States has more than quintupled from 2.2% to about 13% today, but men working within this occupation continue to suffer from stigmatization because they are still stereotyped as effeminate and gay (Landivar, 2013; Munnich & Wozniak, 2017; Whittock & Leonard, 2003). To cope with these unfavorable perceptions and maintain their masculine identity, male nurses report that they engage in a variety of compensatory strategies in their daily lives: they distance themselves from nursing's nurturing elements, emphasize its economic opportunities, and highlight its technical aspects (O'Connor, 2015). Because nursing is one of the fastest-growing careers in the United States, is prestigious and high-paying with a median salary over $50,000, has a small yet increasing percentage of male workers, and clearly involves both agentic and communal skills, it lends itself well to being reframed using dynamic descriptive and injunctive norms. That being

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said, I believe that these normative social influence reframing methods will be successful in augmenting men's interest in a variety of specific HEED roles, not just nursing.

The current study will employ a 3 (Descriptive Norm Framing: dynamic vs. static vs. control) x 3 (Injunctive Norm Framing: high compatibility vs. low compatibility vs. control) between-subjects factorial design. Male participants will read a news article about nursing that either emphasizes the growing number of men entering the field of nursing (dynamic descriptive norm framing), an article that details the percentage of men who are currently employed as nurses (static descriptive norm framing), or an article that does not contain any descriptive normative information (control). To manipulate the framing of injunctive norms, these news articles will also either emphasize the agentic aspects of nursing (high compatibility injunctive norm framing), present a stereotypical description of nursing that highlights its communal aspects (low compatibility injunctive norm framing), or will not contain any injunctive normative information (control). Although I created these materials for this experiment, the data presented across these articles are factual. Men assigned to the control conditions for both types of norms will not be exposed to an article; rather, they will simply be exposed to the dependent variable measures described below.

Participants will rate their interest in nursing careers, their impressions of nurses and nursing careers, and the perceived masculinity of nurses and nursing careers. An additional component of the survey will assess their interest in and perceived goal affordance of a list of careers (i.e., their perceptions that a career will allow them to achieve their goals) that vary in terms of their perceived gender stereotypicality. Furthermore, a future family versus career orientation scale will be included as an exploratory measure. Although I do not necessarily expect that framing a paid occupation in an agentic way will cause men to express more interest

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in taking on family-oriented roles associated with the domestic sphere (e.g., caregiving) in the future, this measure will assess participants' desires to have a more family-oriented or career-oriented focus in the future. Each of these dependent variable measures will be presented to participants in a randomized order.

It is also possible that the hypothesized effects will only hold for men who highly value communal goals and those who do not strongly endorse traditional male role norms. Because prior research indicates that people who are communion-oriented tend to value HEED roles (Diekman et al., 2010), I believe that communal men will be more likely to report interest in nursing following exposure to the dynamic descriptive and high compatibility injunctive careers. Furthermore, I predict that men who do not value or adhere to traditional male role norms are more likely to report more interest in female-dominated careers following exposure to the dynamic descriptive and high compatibility injunctive norm framings. Therefore, this study will employ secondary analyses to test possible moderators of the expected condition effects, namely communal goal endorsement and endorsement of traditional male role norms.

Hypothesis 1. There will be a main effect of descriptive norm framing, such that men exposed to the dynamic descriptive norm framing will report more interest in nursing, indicate more positive impressions of nurses and nursing careers, perceive nursing careers and nurses as more masculine, indicate more interest in female-dominated careers, and report stronger beliefs that these female-dominated careers would allow them to fulfill their personal goals compared with those assigned to the static descriptive norm framing or descriptive norm control condition

Hypothesis 2. There will be a main effect of injunctive norm framing, such that men exposed to the high compatibility injunctive norm framing will report more interest in nursing, indicate more positive impressions of nurses and nursing careers, perceive nursing careers and

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nurses as more masculine, indicate more interest in female-dominated careers, and report stronger beliefs that these female-dominated careers would allow them to fulfill their personal goals compared with those assigned to the low computability injunctive norm framing or injunctive norm control condition.

Hypothesis 3. The main effects for descriptive and injunctive norm framing will be moderated by communal goal endorsement. More specifically, I hypothesize that the dynamic descriptive and high compatibility injunctive norm framings will be especially effective among men high in communal goal endorsement.

Hypothesis 4. The main effects for descriptive and injunctive norm framing will be moderated by endorsement of traditional male role norms. More specifically, I hypothesize that the dynamic descriptive and high compatibility injunctive norm framings will be especially effective among men low in endorsement of traditional male role norms.

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Method

Participants

Sixty-three students enrolled in the University of South Florida Sona participant pool and 362 Amazon Mechanical Turk (MTurk) workers took part in the study. Most of the participants were recruited via MTurk due to the lack of male students registered in the Sona pool.

Out of these 425 participants, I initially excluded from analyses those who did not identify as men ($n = 7$) and those who reported that they were over the age of 25 ($n = 6$). Furthermore, I dropped 32 participants who failed various attention checks throughout the survey and an additional 38 men who spent less than 15 seconds on the Qualtrics page containing the article in which the injunctive and descriptive norm framing manipulations were embedded. I will elaborate on these more stringent exclusion criteria in the results. Therefore, the final sample consisted of 342 men: 42 recruited via the Sona participant pool, and 300 who enrolled through MTurk (see Table 1 for a complete list of demographics).

Procedure and Measures

I told prospective participants that the purpose of the current research was to better understand people's attitudes toward a variety of nontraditional career choices. After consenting to take part in this online study, which they were able to complete at the time and place of their choosing, respondents received a message at the beginning of the survey explaining that they had been randomly assigned to share more about their opinions and perceptions of male nurses. Then, they read and responded to the following materials. The order that the materials are

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presented below essentially mirrors their order in the survey flow, although the order of the moderator measures and the dependent variable measures was randomized.

Nursing estimations. Before they completed the moderator measures, participants gave their best estimates of 1) the median annual salary for nurses currently working in the United States and 2) the percent of nurses currently working in the United States who are men. These items are presented in Appendix A.

Communal and agentic goal endorsement. Participants rated their endorsement of communal and agentic goals using a modified version of Block's (2013) adaptation of a measure originally developed by Diekman and colleagues (2010). They indicated the extent to which seven agentic goals (*having power over others, getting recognition, demonstrating achievement, promoting yourself, pursuing independence, achieving status,* and *competing with others*) and seven communal goals (*helping others, serving humanity, working with people, connecting with others, attending to others, caring for others,* and *developing intimate relationships*) are personally important to them on a 7-point scale, from 1 (*not at all important*) to 7 (*extremely important*). The order of these items was randomized, and separate indices of agentic and communal goal endorsements were created. The results associated with these agentic and communal goal endorsement composites indicated good internal reliability (αs = .81 and .89, respectively). This measure can be found in Appendix B.

Male Role Norms Inventory – Short Form. Next, participants completed Levant, Hall, and Rankin's (2013) Male Role Norms Inventory–Short Form (MRNI-SF), which asked them to indicate their endorsement of 21 statements reflecting norms of traditional masculinity ideology (e.g., "A man should never admit when others hurt his feelings" and "Men should be the leader in any group"). Participants responded to these statements using a scale ranging from 1 (*strongly*

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disagree) to 7 (*strongly agree*), with higher scores indicating stronger endorsement of these stereotypical gender roles. The items were presented to the participants in a random order and were then combined and averaged. The consistency of results across these items was excellent ($\alpha = .93$). This measure can be found in Appendix C.

Nursing framing manipulation. Participants assigned to eight of the nine conditions then read the news articles containing the nursing framing manipulation. These articles are presented in Appendices D through K. Again, these articles employed a descriptive norm framing, an injunctive norm framing, or some combination of the two. Those assigned to the dynamic descriptive norm framing read that "the percentage of male nurses has more than quintupled since 1960 and is sharply on the rise today," and this information was accompanied by a line graph showing how this percentage has been increasing rapidly in the United States. In contrast, participants assigned to the static descriptive norm framing read that "the percentage of male nurses in the United States is still just 13%," and this information was supplemented by a pie chart showing the current percentage of men and women employed as nurses. Those assigned to the descriptive norm control condition were not exposed to any descriptive normative information.

For the injunctive norm framings, those assigned to the high compatibility framing read, for instance, that nursing is an agentic career "for people who want to be engaged in work that requires leadership and heroism." Participants assigned to the low compatibility injunctive framing read that it is a communal career "for people who want to be engaged in work that requires compassion and selflessness." Those assigned to the injunctive norm control condition were not exposed to any injunctive normative information. Therefore, participants assigned to

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the control conditions for both variables did not read an article about nursing; they simply completed the dependent variable measures and served as a baseline.

Nursing ratings. The next part of the survey contained an 18-item measure assessing each participant's interest in and willingness to learn more about nursing careers, their perceptions of how others would see them if they decided to pursue a career in nursing, and their general impressions of nurses and nursing. On a scale ranging from 1 (*not at all interested*) to 7 (*very interested*), participants rated their general interest in a nursing career. Next, they indicated their interest in learning more about nursing careers using a scale ranging from 1 (*not at all interested*) to 7 (*very interested*). Participants guessed how other men might perceive their manliness if they were to pursue a career in nursing using a scale from 1 (*a lot less manly*) to 5 (*a lot manlier*). They answered an identical question asking about how women might perceive their manliness if they were to choose this occupation. Next, participants used a scale ranging from 1 (*They would lose a lot of respect for me*) to 5 (*They would gain a lot of respect for me*) to respond to an item that asked about how much others would respect them if they decided to become a nurse. Furthermore, participants indicated how enthusiastic they would be if they had a son who wanted to become a nurse using a scale from 1 (*not at all enthusiastic*) to 7 (*very enthusiastic*). The men subsequently responded to 12 items about their overall perceptions of nurses and nursing careers, with higher scores on the various 7-point scales (measuring factors like the perceived prestige of nursing careers and the competence of nurses) generally indicating more positive perceptions. The presentation order of these items was randomized. This measure can be found in Appendix L.

After reverse-scoring the necessary items, I performed an exploratory factor analysis (EFA) with principal axis factoring and an oblique promax rotation on these 18 items. Using

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Kaiser's criterion and the accompanying scree plot, I extracted three discernable factors: 1) a factor with three items that reflected participant interest in nursing, 2) a factor with ten items that captured positive impressions of nurses and nursing careers, and 3) a five-item factor that tapped the perceived masculinity of nurses and nursing careers. I combined and averaged the items associated with each of these unique factors to create an interest in nursing composite, a positive impressions of nursing composite, and a nursing masculinity composite. These three composites demonstrated adequate to good internal reliability (αs = .87, .84, and .70 respectively).

General career interest and perceived goal affordance. I used a modified version of a measure developed by Block (2013), which was derived from the work of Diekman et al. (2010), to assess participants' views of careers that vary in terms of their perceived gender stereotypicality. This measure can be found in Appendix M. Participants rated four careers that were previously found to be perceived as the most female-dominated HEED-related occupations (*social worker*, *kindergarten teacher*, *nurse*, and *special education teacher*), the four careers that were perceived to be the most male-dominated STEM occupations (*industrial engineer*, *software developer*, *mechanical engineer*, and *computer system architect*), and an additional four careers that have a balanced gender composition in the United States (*news correspondent*, *lawyer*, *laboratory technician*, and *college professor*) in terms of their career interest and perceived goal affordance (Block, 2013). Each of these twelve occupations requires an advanced degree and can be considered a white-collar career, thereby ensuring that there will not be any confounding effect related to socioeconomic status.

To measure career interest, I asked the respondents to rate how difficult or easy it is to imagine themselves in each of the twelve careers, which were presented in a random order, on a scale from 1 (*extremely difficult*) to 7 (*extremely easy*). Then, I measured the perceived goal

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affordance of these careers by asking participants to use a scale ranging from 1 (*extremely difficult*) to 7 (*extremely* easy) to rate how difficult or easy it is to imagine that each of the twelve careers would fulfill their personal goals. Again, these items were presented in a random order. Although I originally intended to create a composite for the female-dominate, male-dominated, and gender balanced careers for each of these measures, analyses revealed that the ease in which participants could imagine themselves in a given career and that career's perceived goal affordance were very highly correlated. As such, I combined and averaged the scores associated with each of these three career types across the two items, creating a female-dominated career interest composite, a male-dominated career interest composite, and a gender balanced career interest composite. The internal consistency associated with these composites ranged from acceptable to excellent (αs = .86, .94, and .76, respectively).

Future family versus career orientation. To evaluate men's expectations about their future family versus career orientation, I drew from a 3-item scale developed by Durante, Griskevicius, Simpson, Cantú, and Tybur (2012). Before reading these items, whose order of presentation were randomized, participants read the following instructions: "Please indicate which is more important to you in terms of your future." They responded using 7-point scales anchored with the following labels: (a) *having a family – having a career*, (b) *spending quality time with my future children – having a satisfying job*, and (c) *having a happy and well-adjusted family – reaching my full career potential*. Responses were combined into a family versus career tradeoff index, such that higher numbers indicate an expected prioritization of work over family. The scores associated with this index demonstrated good internal validity (α = .86). This measure can be found in Appendix N.

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Basic attention checks. The survey contained two basic attention checks. The first of these was embedded in the nursing ratings measure. Participants were presented with a scale ranging from 1 to 7, and they were told to select the number 4. The second basic attention check, which was embedded in the general career interest and perceived goal affordance measure, asked participants to select the number 2 out of a scale ranging from 1 to 7. These items can be found in Appendix O.

More rigorous attention checks. I included two more rigorous attention checks in the survey, which can be found in Appendix P. The first attention check instructed participants who read a news article containing the nursing framing manipulation (i.e., those who were not assigned to the control conditions for both of the independent variables) to recall the median annual salary for nurses currently working in the United States. The opening sentence of each article iteration mentioned this detail, and I expected participants to choose the correct answer, $50,000, out of the five options presented to them. Next, the survey instructed participants to select what percent of all nurses currently working in the United States are men according to the article that they read. Therefore, this multiple-choice item functioned as a descriptive norm framing attention check. Participants assigned to either the static or dynamic descriptive norm framing should have indicated that men were described as comprising 13% of the current population of United States nurses, whereas participants assigned to the descriptive norm control condition were expected to select that this information had not been provided in the article.

Demographic, quality of responding, and suspicion questionnaire. Finally, I asked participants to respond to demographic items, five items measuring the quality of their responding, and three items inquiring about suspicion. The version of this questionnaire

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presented to MTurk workers is presented in Appendix Q, whereas the version completed by Sona

participants can be found in Appendix R.

<center>Results</center>

Preliminary Analyses

  Correlations and covariates. Bivariate correlations between the main study variables are displayed in Table A2. Because this matrix shows that there are no variables associated with the dependent variables yet relatively unrelated to the independent variables, I concluded that it would not be appropriate to include any covariates in tests of Hypotheses 1-4.

Assessing Attention to Study

  The following section describes and evaluates participants' attention to the study, which was measured by assessing their performance on basic and more rigorous attention checks and by recording the amount of time spent on the page containing the manipulated news article. Table 3 presents the bivariate correlations between these attention-related variables.

  Basic attention checks. I made an a priori decision to exclude from analyses the data associated with participants who did not pass both of the basic attention checks, which simply required respondents to select a designated number out of a scale ranging from 1 to 7.

  More rigorous attention checks. Two multiple-choice items served as more rigorous attention checks. The first asked participants who were assigned to read a version of the news article about nursing to select the median annual salary for nurses currently working in the United States, a detail mentioned in the passage's first sentence. Out of the 361 participants originally included in analyses who read a version of the article, 286 respondents (69% of the sample) selected the correct choice, whereas 75 others (18% of the sample) failed the check. Fifty-one others (12% of the sample) were assigned to the control conditions for both

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independent variables and thus did not complete this item. Failure of this item was positively correlated with participants' failure of the second rigorous attention check ($p < .01$).

Next, respondents who were assigned to read the passage were instructed to recall the percent of nurses currently working in the United States who are men. The article versions containing the static or dynamic descriptive norm framing included this statistic, but those assigned to the descriptive norm control condition were not given this information. Again, 51 of the 412 participants (12% of the sample) whose data were initially retained did not complete this item because they were assigned to the control conditions for both independent variables and thus did not read a news story about nursing. Seventy-nine (19% of the sample) of the 361 respondents who did read a version of the article failed the second check, but 282 men (68% of the sample) selected the correct response. As started earlier, failure of this item was significantly and positively linked to failure of the first rigorous attention check ($p < .01$).

I examined how many participants passed at least one or both of these more rigorous attention checks. Three hundred twenty-nine men (80% of the sample) out of the 361 who read a news article passed at least one of the checks, yet only 239 of the participants (58% of the sample) passed both. To prevent a substantial loss of statistical power while still eliminating from analyses participants who did not pay adequate attention to the manipulation, I decided to exclude the 32 men who failed both of the checks.

Time spent on article page. With the exception of participants who were assigned to both the descriptive and injunctive norm control conditions, the amount of time that respondents spent on the survey page containing the manipulated news article is a crucial measure of attention to the manipulations. Including all 361 participants who were exposed to one of these passages, even the 32 men who failed both rigorous attention checks, the average time spent on

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the article page was one minute and 27 seconds with a standard deviation of four minutes and 23 seconds. The distribution for article page time was very positively skewed and kurtotic, especially due to the presence of one outlier who spent 80 minutes and 52 seconds on the page.

The most concerning aspect of these results is the fact that more than half of these 361 participants spent less than a minute on the article page; in fact, about 30% of them spent less than 30 seconds on the page. This raised serious questions about the efficacy of the manipulation. Excluding the 32 men who failed both of the more rigorous attention checks removed the aforementioned outlier and thereby markedly decreased the skewness and kurtosis of the distribution. However, the average time was still just one minute and 18 seconds, about 53% of the participants who read a version of the article spent less than 60 seconds on the page, and 27% of them moved on in 30 seconds or less. Because it is improbable that participants who spent 15 seconds or less on the article page were able to truly encode its contents, I also decided to exclude the 61 men who did so from analyses.

Twenty-three men who failed both of the more in-depth attention checks also moved on from the article page in 15 seconds or less, so 70 total participants were excluded from analyses for failing to meet the attention check and article time requirements on top of the 13 respondents who were initially dropped because they did not meet the gender and age criteria. Therefore, data associated with 342 participants were ultimately retained and analyzed in tests of the hypotheses.

Primary Analyses

To test my overarching hypotheses that there would be significant main effects of descriptive norm framing and injunctive norm framing on nursing-related outcomes (reported interest in nursing, positive impressions of nursing, perceived masculinity of nursing, and

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general interest in HEED careers), I first conducted a multivariate factorial analysis of variance (MANOVA). Then, I ran a series of regression analyses to see if communal goal endorsement and endorsement of traditional male role norms moderated the relationships between the framings and the dependent variables.

Hypotheses 1 and 2. Hypotheses 1 and 2 proposed that there would be significant main effects for the two independent variables, descriptive and injunctive norm framing. More specifically, I hypothesized that men exposed to the dynamic descriptive norm framing and those assigned to the high compatibility injunctive norm framing would express more interest in nursing, have more positive impressions of nurses and nursing careers, perceive nursing careers and nurses as more masculine, and report more interest in female-dominated careers. To test these hypotheses, I submitted the four primary dependent variables, interest in nursing, positive impressions of nursing, perceived masculinity of nursing, and general interest in HEED careers to a 3 (Descriptive Norm Framing: dynamic vs. static vs. control) x 3 (Injunctive Norm Framing: high compatibility vs. low compatibility vs. control) MANOVA. The results of this analysis are presented in Table 4.

Although there were no statistically significant main effects for descriptive or injunctive norm framing ($ps > .19$), there was one unhypothesized significant descriptive norm framing X injunctive norm framing interaction for perceived masculinity of nursing, $F(4, 333) = 2.82$, $p < .05$, $\eta^2 = .03$. A simple effects analysis revealed that being exposed to a descriptive norm framing caused the perceived masculinity of nurses to significantly increase when displayed alongside the low compatibility injunctive norm framing, $F(4, 333) = 4.72$, $p < .05$, $\eta^2 = .03$, but it did not lead to significantly more perceived masculinity when paired with the injunctive norm control condition or high compatibility injunctive norm framing, $F(4, 333) = 1.05$, ns, $\eta^2 = .01$

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and $F(4, 333) = 1.05$, ns, $\eta^2 = .01$ respectively. Figure 1 depicts the results of this simple effects analysis. The effect size for the descriptive norm framing increase in perceived masculinity of nursing was larger when it appeared alongside the low compatibility injunctive norm relative to the other two injunctive norm framing conditions. Given that this pattern was not predicted, was an isolated significant finding, and does not make obvious sense, it is possible that it reflects a false positive statistical effect. Therefore, Hypotheses 1 and 2 were not supported by these findings.

Hypotheses 3 and 4. Hypotheses 3 and 4 predicted that communal goal endorsement and endorsement of traditional male role norms would respectively moderate the effects of the descriptive and injunctive norm framings on the dependent variables. In other words, I hypothesized that the dynamic descriptive and high compatibility injunctive norm framings would be especially effective among men high in communal goal endorsement and for those low in endorsement of traditional male role norms. I performed a series of eight regression analyses using Hayes' (2012) PROCESS macro for SPSS to test if the two-way interactions between the independent variables and these hypothesized moderators explained a significant amount of the variance in each of the primary dependent variables. Tables 5 through 12 present the results of these regressions.

Communal goal endorsement. I began by regressing interest in nursing on descriptive norm framing, injunctive norm framing, and communal goal endorsement. Doing so revealed that the model explained a significant amount of the variance in interest in nursing, $F(13, 328) = 2.58$, $p < .01$, and it produced a significant dynamic descriptive norm framing X communal goal endorsement interaction, $t = 2.66$, $p < .01$. The simple slopes for this two-way interaction were significant at high levels of communal goal endorsement ($t = 3.18$, $p < .01$), but not at low levels,

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t = -.11, *p* > .05. Figure 2, which displays the significant descriptive norm framing X communal goal endorsement interaction, reveals that men high in communal goal endorsement reported significantly more interest in nursing when exposed to the dynamic descriptive norm framing relative to the descriptive norm control condition. This result is consistent with Hypothesis 3, but I did not also find a significant high compatibility injunctive norm framing X communal goal endorsement interaction.

I then regressed positive impressions of nurses and nursing careers on descriptive norm framing, injunctive norm framing, and communal goal endorsement. The model explained a significant portion of the variance in this dependent variable, *F*(13, 328) = 4.73, *p* < .01, and this analysis revealed a significant low compatibility injunctive norm framing X communal goal endorsement interaction, *t* = -2.86, *p* < .01. The simple slopes for the low compatibility injunctive norm framing X communal goal endorsement interaction were significant at low levels of communal goal endorsement (*t* = 3.23, *p* < .01), but not at high levels, *t* = -.59, *p* > .05. Figure 3 reveals that men low in communal goal endorsement reported significantly more positive impressions of nursing when exposed to the low compatibility injunctive norm framing relative to the injunctive norm control condition. These results do not align with my predictions, and indeed seem to contradict them.

Regressing perceived masculinity of nursing on the norm framings and communal goal endorsement resulted in a significant model, *F*(13, 328) = 3.01, *p* < .01, and produced a significant static descriptive norm framing X communal goal endorsement interaction, *t* = 2.29, *p* < .05. Although none of the simple slopes were significant for this (*ts* = ±1.65, ps > .05), Figure 4 shows that men low in communal goal endorsement tended to perceive nursing as less masculine when exposed to the static descriptive norm framing relative to the descriptive norm

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control condition. This finding is not at odds with this hypothesis, nor does it provide strong

evidence that supports my theorizing. I found a similar pattern of results when I regressed

interest in female-dominated careers on the norm framings and communal goal endorsement.

The model was significant, $F(13, 328) = 1.78$, $p < .05$, and there was a significant static

descriptive norm framing X communal goal endorsement interaction ($t = 2.17$, $p < .05$), but the

simple slopes failed to reach significance, $ts = \pm1.38$, $ps > .05$. As seen in Figure 5, men low in

communal goal endorsement tended to report less interest in female-dominated careers when

exposed to the static descriptive norm framing relative to the descriptive norm control condition,

whereas men high in communal goal endorsement tended to express more interest in them after

seeing the static descriptive framing relative to control. Thus, I did not find much support for

Hypothesis 3.

Traditional male role norms endorsement. Next, I reran this series of tests replacing

communal goal endorsement with endorsement of traditional male role norms in the models.

Regressing interest in nursing on the norm framings and endorsement of traditional male role

norms failed to explain a significant amount of the variance in the dependent variable, $F(13, 328)$

$= .48$, $p > .05$, and did not produce any significant two-way interactions, $ts < \pm.88$, $ps > .05$.

Then, I regressed positive impressions of nurses and nursing careers on the norm framings and

endorsement of traditional male role norms. Doing so resulted in a significant overall model,

$F(13, 328) = 2.45$, $p < .01$; however, it did not produce any significant two-way interactions, $ts <$

±1.90, $ps > .05$. Regressing perceived masculinity of nursing on the norm framings and

endorsement of traditional male role norms also revealed that the overall model was significant,

$F(13, 328) = 1.94$, $p < .05$, but again did not result in any significant two-way interactions, $ts <$

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±1.34, *ps* > .05. As such, the findings of these three analyses were not consistent with

Hypothesis 4.

Finally, I regressed interest in female-dominated careers on the norm framings and

endorsement of traditional male role norms. The overall model was not significant, $F(13, 328) =$

1.62, *p* > .05, but there was a significant static descriptive norm framing X endorsement of

traditional male role norms interaction, *t* = -3.27, *p* < .01. The simple slopes for the two-way

interaction were significant at both low and high levels of endorsement of traditional male role

norms, *t* = 2.34, *p* < .05, and *t* = -2.01, *p* < .05, respectively. As seen in Figure 6, men low in

endorsement of traditional male role norms reported significantly more interest in female-

dominated careers when assigned to the static descriptive norm framing relative to the

descriptive norm control condition, whereas men high in endorsement of traditional male role

norms expressed significantly less interest in these careers when exposed to the static descriptive

norm framing relative to the descriptive norm control condition. These findings neither directly

contradict nor bolster my predictions.

In summary, the results of these tests only provided minimal support for Hypothesis 3

and Hypothesis 4.

Exploratory Analyses and Alternative Exclusion Criteria

Exploratory dependent variables. In addition to the four main dependent variables that

I have already discussed, I also conducted further hypothesis testing with three exploratory

outcome measures: participants' self-reported interest in male-dominated careers, interest in

gender balanced careers, and future family versus career orientation. First, I reran the 3

(Descriptive Norm Framing: dynamic vs. static vs. control) x 3 (Injunctive Norm Framing: high

compatibility vs. low compatibility vs. control) MANOVA to test whether there would be

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significant main effects for the two independent variables on these exploratory dependent variables. Table 13 presents the results of the analysis, which produced one statistically significant main effect of descriptive norm framing for future family versus career orientation $F(2, 333) = 3.99$, $p < .05$, $\eta^2 = .02$. Those assigned to the dynamic descriptive norm framing indicated that having a career is more important for their future ($M = 4.23$, $SD = 1.32$) than did those exposed to the descriptive norm control condition ($M = 4.09$, $SD = 1.30$), who in turn reported that it is more important than those who were assigned to the static descriptive norm framing, $M = 3.76$, $SD = 1.30$. These results, which are displayed in Figure 7, totally conflicted with the pattern of findings that I anticipated, and there were no other significant main effects or interactions found.

Next, I tested whether communal goal endorsement and endorsement of traditional male role norms would moderate the effects of the descriptive and injunctive norm framings on these exploratory dependent variables. The results of these regression analyses are displayed in Tables 14 through 19. I began by regressing interest in male-dominated careers on the norm framings and communal goal endorsement explained a significant amount of the variance, $F(13, 328) = 2.11$, $p < .05$, and it produced one significant low compatibility injunctive framing X communal goal endorsement interaction, $t = 2.17$, $p < .05$. The simple slopes for this two-way interaction were significant at high levels of communal goal endorsement ($t = 1.97$, $p < .05$), but not at low levels, $t = -1.65$, $p > .05$. Figure 8 shows that men high in communal goal endorsement who were assigned to the low compatibility injunctive norm framing reported significantly more interest in male-dominated careers relative to those assigned to the injunctive norm control condition. On the other hand, regressing interest in gender neutral careers failed to explain a significant amount of the variance in the dependent variable, $F(13, 328) = .77$, $p > .05$, and did

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not result in any significant two-way interactions, $ts < \pm 1.57$, $ps > .05$. And although the overall model was significant when I regressed future family versus career orientation on the framings and communal goal endorsement, $F(13, 328) = 2.30$, $p < .01$, this failed to produce any significant two way-interactions, $ts < \pm 1.59$, $ps > .05$. Thus, these findings gave no additional support for Hypothesis 3.

I conducted these multiple regression analyses again, replacing communal goal endorsement with endorsement of traditional male role norms in the models. Regressing interest in male-dominated careers on the independent variables and endorsement of traditional male role norms did not result in a significant overall model, $F(13, 328) = 1.24$, $p > .05$, but the high compatibility injunctive norm framing X endorsement of traditional male role norms interaction was significant, $t = 2.22$, $p < .05$. A simple slopes analysis revealed that this interaction was significant at high levels of endorsement of traditional male role norms ($t = 2.62$, $p < .01$), but not at low levels, $t = -.45$, $p > .05$. As seen in Figure 9, among men high in traditional male role norms endorsement, those assigned to the high compatibility injunctive norm framing reported significantly more interest in male-dominated careers relative to those exposed to the injunctive norm control condition. The same pattern of results persisted when I regressed interest in gender balanced careers on the framings and endorsement of traditional male role norms. There was a significant high compatibility injunctive norm framing X endorsement of traditional male role norms interaction ($t = 2.02$, $p < .5$), but the overall model again failed to explain a significant portion of the variance in this dependent variable, $F(13, 328) = .97$, $p = .48$. The simple slopes were significant at high ($t = 2.10$, $p < .05$) but not low ($t = -.69$, $p > .05$) levels of endorsement of traditional male role norms. Results of this analysis are displayed in Figure 10. Participants high in endorsement of traditional male role norms reported significantly more interest in gender

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balanced careers when exposed to the high compatibility injunctive norm framing relative to the injunctive norm control condition.

Finally, regressing future family versus career orientation on the predictor variables did not produce a significant overall model, $F(13, 328) = 1.67$, $p > .05$, or any significant two-way interactions, $ts < ±1.68$, $ps > .05$. Analyses of these exploratory dependent variables therefore did not provide any evidence of the efficacy of these descriptive and injunctive norm framings; no additional support was found for any of the four hypotheses.

Agentic goal endorsement. I tested whether participants' endorsement of agentic goals would moderate the effects of the descriptive and injunctive norm framings on the primary and exploratory dependent variables. These supplemental regression analyses failed to produce any significant overall models, $Fs(13, 328) < 1.48$, $ps > .05$. Furthermore, the two-way interactions between the independent variables and agentic goal endorsement did not explain a significant amount of the variance in any of the dependent variables, $ts < ±1.76$, $ps > .05$. Conducting these tests thus ruled out agentic goal endorsement as a significant moderator.

Alternative exclusion criteria. As described earlier, embedding descriptive normative information in campaigns to promote desirable behaviors sometimes causes these initiatives to backfire among individuals who initially overestimated their prevalence (Schultz et al., 2007). Upon discovering that roughly 83% of the sample – both before and after excluding the 70 participants who did not meet the rigorous attention check and time on article page criteria – overestimated the percent of male nurses currently working in the United States at the beginning of the study (i.e., estimated that more than 13% of male nurses are men), I decided to retest all hypotheses for just those participants who underestimated this percent. Only 68 men out of the original sample of 412 participants underestimated this percent, and only 57 of these also met the

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rigorous attention check and time on article page criteria. This substantial decrease in sample size certainly reduced the statistical power to detect any effects that may exist; predictably, reanalyzing the data for the sample of 68 men and the further reduced group of 57 respondents did not provide increased support for any of the four hypotheses.

Discussion

There are economic and societal incentives for promoting men's involvement in stereotypically feminine roles and behaviors alongside continuing efforts to improve women's access to those that are stereotypically masculine. Therefore, developing and refining methods aimed at increasing men's and women's engagement in gender-disparate domains is a crucial step in the pursuit of creating more egalitarian workplaces and societies. The purpose of this experiment was to determine if using dynamic descriptive and high compatibility injunctive norms to reframe a stereotypically feminine role might be a feasible and effective way to increase its appeal among men.   Unfortunately, I found very little support for my hypotheses.

Hypotheses 1, 2, 3, and 4

Hypotheses 1 and 2. Hypothesis 1 predicted that there would be a significant descriptive norm framing main effect: I anticipated that compared with participants assigned to the static descriptive norm framing or the descriptive norm control condition, participants assigned to the dynamic descriptive norm framing would have more interest in nursing, report more positive impressions of nurses and nursing careers, perceive nursing careers and nurses as more masculine, and indicate more interest in female-dominated careers. But because I failed to find any significant main effects for this variable across all four of these outcome measures, Hypothesis 1 was not supported by the data. Hypothesis 2 proposed a significant main effect for injunctive norm framing, such that exposure to the high compatibility injunctive norm framing (compared with the low compatibility injunctive norm framing or injunctive norm control condition) would produce the same outcomes as those anticipated to arise among men shown the

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dynamic descriptive norm framing. Again, the analyses did not detect any significant differences in the dependent variables across the levels of injunctive norm framing. One significant descriptive norm framing X injunctive norm framing interaction emerged for perceived masculinity of nursing, but the results of the follow-up simple effects analysis were essentially uninterpretable. When men were exposed to the low compatibility injunctive norm framing alongside a descriptive norm framing, they perceived nurses and nursing careers as significantly more masculine compared with those assigned to the other two injunctive norm framings. This unexpected finding, which suggests that men perceive nursing as more masculine when its communal, nurturing aspects are highlighted, did not align with my predictions.

Hypothesis 3. Hypothesis 3 predicted that communal goal endorsement would moderate the proposed effects associated with the first two hypotheses. Therefore, I anticipated that the dynamic descriptive norm framing and the high compatibility injunctive norm framing would be particularly effective among men who highly value communal goals. I did find that men high in communal goal endorsement indicated significantly more interest in nursing when assigned to the dynamic descriptive norm framing relative to the control. However, this same pattern of findings did not occur among men exposed to the high compatibility injunctive norm framing who strongly value communal goals. Moreover, tests of this proposed moderator for the other three main dependent variables produced results that did not bolster my predictions. Men low in communal goal endorsement indicated more positive impressions of nursing when exposed to the low compatibility injunctive norm framing compared with the control, a finding totally at odds with my hypothesis.

Those who did not strongly value communal goals also tended to perceive nursing as less masculine and report less interest in female-dominated careers when assigned to the static

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descriptive norm framing relative to the descriptive norm control condition. These results do not contradict my predictions. In fact, given that recent research has demonstrated that static descriptive norms are less effective at facilitating counternormative behavior (Sparkman & Waltman, 2017), it makes sense that men low in communal goal endorsement would perceive nursing as more feminine and female-dominated careers as less appealing in response to this framing. However, it is unclear to me why men high in communal goal endorsement tended to report more interest in female-dominated careers when exposed to the static descriptive norm framing compared with the control. Perhaps they did so because this framing increased their perception that there is a need for more communion-oriented men in female-dominated careers. All in all, I only found minimal support for Hypothesis 3.

Hypothesis 4. Hypothesis 4 proposed that the anticipated effects of the two independent variables would be more pronounced among men low in endorsement of traditional male role norms. Tests of this hypothesis largely produced nonsignificant findings. Regressing interest in nursing, positive impressions of nursing, and perceived masculinity of nursing on the descriptive and injunctive norm framings and endorsement of traditional male role norms did not produce any significant two-way interactions. When I conducted a fourth regression analysis with female-dominated careers as the outcome, results interestingly mirrored those produced when I analyzed this dependent variable in tests of the third hypothesis. Participants who strongly valued traditional male role norms expressed significantly less interest in female-dominated careers when assigned to the static descriptive norm framing compared with the control, whereas men low in endorsement of these norms reported significantly more interest in female-dominated careers when assigned to the static descriptive norm framing relative to the descriptive norm control condition. Again, it is not obvious to me why the static descriptive norm framing would

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increase interest in female-dominated careers among participants low in endorsement of traditional male role norms. My prediction that men low in endorsement of traditional male role norms would be especially receptive to the dynamic descriptive norm framing and the high compatibility injunctive norm framing thus did not pan out; therefore, the hypotheses of my thesis were largely unsubstantiated by the data.

Exploratory Analyses and Alternative Exclusion Criteria

  Exploratory dependent variables. Upon concluding my analyses for the four primary dependent variables, I tested the four aforementioned hypotheses with three exploratory dependent variables to see if the descriptive and injunctive norm framings might impact participants' interest in male dominated-careers, their interest in gender balanced occupations, and their future family versus career orientation. Tests of the first two hypotheses on these exploratory outcomes only revealed one significant main effect of descriptive norm framing for future family versus goal orientation. Participants exposed to the dynamic descriptive norm framing anticipated that they would have a stronger career orientation in the future than those assigned to the control condition, who reported a desire to have a stronger career orientation than those assigned to the static descriptive norm framing. Because I anticipated that the high compatibility injunctive and dynamic descriptive norm framings would lead men to be more open to the stereotypically feminine career of nursing, I guessed that they might also be more amenable to stereotypically feminine roles in the home. This suspicion was refuted by the data.

  I proceeded by conducting regression analyses to determine if communal goal endorsement would moderate the effects of the two independent variables on these three exploratory dependent variables. When I regressed interest in male-dominated careers on communal goal endorsement and the framings, I found a significant low compatibility injunctive

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framing X communal goal endorsement interaction. Men high in communal goal endorsement who were assigned to the low compatibility injunctive norm framing expressed more interest in male-dominated careers relative to the injunctive norm control condition. This finding is counterintuitive, and I find it difficult to rationalize why men who highly value communion would respond to a communal framing of a stereotypically feminine role by reporting more interest in male-dominated careers. Furthermore, conducting regressions with interest in gender neutral careers and future family versus career orientation did not produce any significant two-way interactions. Taken together, these findings do not support Hypothesis 3 whatsoever.

Finally, I concluded this additional hypothesis testing by running regression analyses to determine if endorsement of male role norms moderated the anticipated effects of the framings on these three exploratory dependent variables. When I conducted regressions with interest in male-dominated careers and interest in gender balanced careers as the dependent variables, the same pattern of findings arose: traditional male role norms interacted with the high compatibility injunctive norm framing, such that men high in endorsement of traditional male role norms were significantly more likely to report interest in male-dominated and gender balanced careers when assigned to the high compatibility injunctive norm framing compared to the injunctive norm control condition. Although it would be predictable if men who strongly value traditional male role norms generally reported more interest in male-dominated and gender balanced careers, it is unclear why they only did so when exposed to an article that emphasized a stereotypically feminine career's compatibility with traditional male role norms. Because I did not detect any significant findings when I regressed future family versus career orientation on the framings and endorsement of traditional male role norms, the results of these exploratory dependent variables failed to provide incremental support for my four hypotheses.

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Agentic goal endorsement. Next, I wanted to determine if the effects of the framings on the dependent variables had been moderated by participants' endorsement of agentic goals. I thought it was possible that men who highly value agentic goals had been especially influenced by the high compatibility injunctive framing, which emphasized the agentic aspects of nursing. I did not find any evidence that corroborated this suspicion.

Limitations and Future Directions

A number of methodological and theoretical issues created concerning limitations that should be addressed by future work. First, the manipulations of these descriptive and injunctive norms should be refined and strengthened. A vast majority of participants did not seem to pay adequate attention to the medium through which these manipulations were presented, a fabricated news article. That more than half of the original sample spent less than a minute on the article page and that so many participants failed the more rigorous attention checks gives me the impression that these framings need to be presented in a more engaging way. Valid manipulation checks should also be employed in future studies to determine whether these norm framing manipulations are actually having the intended effects. In addition to the issues posed by the manipulations in this study, it also seems to be the case that the sample used was not the best choice for this line of research. Although participants had to be fairly young in order to be eligible to participate in the study, the vast majority of these men were recruited via MTurk, and roughly half of them indicated that they have full-time employment. Because they already have established careers in other fields, it is possible that these men were less receptive to these nursing manipulations; therefore, future studies should make it a priority to recruit boys who are still in high school or men who are unemployed. Finally, follow-up work should recruit a larger sample to ensure that the study is sufficiently powered.

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In addition to methodological issues, the fact that the vast majority of the sample initially believed that there is a larger share of male nurses currently working in the United States than there is in reality may shed some light on the null results of this study. Prior to analyzing this study's data, I believed that men had inaccurate perceptions of the number of male nurses; however, I thought that they tended to underestimate this figure. This overestimation means that when many of the participants read the passage about nursing, they were confronted with the realization that there are actually fewer men engaging in this role than they had anticipated. Social marketing campaigns used to increase the occurrence of positive behaviors sometimes backfire among individuals who think that these positive behaviors are more prevalent than they are. Correcting people's misperceptions of descriptive norms can have unintended negative consequences in such cases. In this particular study, sending the message that there are actually fewer male nurses than participants had guessed could have inadvertently reinforced the belief that it's unacceptable and atypical for men to take on stereotypically feminine roles.

Although injunctive norms have been shown to reduce such boomerang effects that sometimes result when misperceptions of descriptive norms are corrected (Schultz et al., 2007), many men may not have encoded both of the manipulations because they spent so little time on the article page. Future studies should determine if perceptions of men's involvement in other stereotypically feminine roles and behaviors are similarly inaccurate. These inflated perceptions may also have some significant implications that should be explored. From the perspective of social role theory, which proposes that repeatedly observing people engaging in counterstereotypic roles drives the modification of stereotype content (Koenig & Eagly, 2014), such overestimations may be beneficial: they may indicate that the association between nursing and femininity is weakening. At the same time, it's also possible that these inaccurate

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perceptions could have the undesirable effect of causing people to underestimate or trivialize the need for male nurses.

Another unanticipated finding is that, on average, the men who participated in this study indicated that they value communal goals ($M = 5.40$) quite a bit more than they value agentic goals ($M = 4.70$). Furthermore, a majority of participants responded that they would be very enthusiastic if they had a son who wanted to become a nurse ($M = 5.84$) despite the fact that they generally reported that they were not very interested in a nursing career ($M = 3.34$). Taken together, these results suggest that 1) young men today may be more communion-oriented and less agency-oriented than men of prior generations and 2) participants are generally supportive of men who become nurses even if they are not interested in the field themselves. So, it seems that male gender rules are becoming more flexible and that young men who have not yet chosen a college major or pursued a career in another field might be more open to becoming nurses than young men who came of age in the past.

Finally, it might be the case that norm change interventions are not as successful when the targeted norm involves career choices instead of concrete behaviors that can be done on a more regular basis, such as recycling and alcohol consumption. Follow-up studies should examine whether similar dynamic descriptive and high compatibility injunctive norm framings might increase men's willingness to engage in stereotypically feminine behaviors that more closely resemble those that have been successfully modified by social-norms marketing campaigns.

Tables and Figures

Table 1. *Demographic characteristics by sample*.

Variable	MTurk Sample (*n* = 300)	Sona Sample (*n* = 42)
Gender		
Man	300 (100%)	42 (100%)
Age	22.91 (1.88)	2.43 (1.40)
Race/Ethnicity		
Non-Hispanic White, European American	201 (67.0%)	13 (31.0%)
Black, Afro-Caribbean, African American	23 (7.7%)	4 (9.5%)
East Asian, Pacific Islander, Asian American	22 (7.3%)	4 (9.5%)
Latina, Latino, Hispanic American	31 (1.3%)	13 (31.0%)
South Asian, Central Asian, Indian American	4 (1.3%)	2 (4.8%)
Middle Eastern, Arab American	2 (.7%)	1 (2.4%)
Alaskan Native, Native American	4 (1.3%)	0 (.0%)
Biracial, Multiracial	11 (3.7%)	3 (7.1%)
Other	2 (.7%)	2 (4.8%)
Sexual Orientation		
Straight	263 (87.7%)	32 (76.2%)
Bisexual	23 (7.7%)	5 (11.9%)
Gay	9 (3.0%)	4 (9.5%)
Current Employment Status		
Full time employment	155 (51.7%)	1 (2.4%)
Part time employment	66 (22.0%)	21 (5.0%)
Unemployed/Looking for work	22 (7.3%)	7 (16.7%)
Unemployed/Not looking for work	5 (1.7%)	10 (23.8%)
Other	2 (.7%)	3 (7.1%)
Student	72 (24.0%)	42 (10.0%)
Year in College if Student	-	2.55 (1.06)
Nursing Major if Student	-	0 (.0%)
Currently Works as Nurse	0 (.0%)	0 (.0%)
Reported Intention to Become Nurse	6 (2.0%)	0 (.0%)
Parent with Nursing Occupation	22 (7.3%)	3 (7.1%)
Is Currently Head of Household	165 (55.0%)	1 (2.4%)
Political Orientation	3.54 (1.46)	3.48 (1.28)
Socioeconomic Status	3.48 (1.18)	3.83 (1.09)

Note. Age, Socioeconomic Status, and Political Orientation are presented as means with standard deviations in parentheses. Higher Political Orientation values indicate more conservatism.

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Table 3. *Bivariate correlations among attention variables*.

Variable	1.	2.	3.
1. Rigorous Attention Check 1			
2. Rigorous Attention Check 2	-.13*		
3. Time Spent on Article Page	.01	-.03	

Note. * *p* < .05. ** *p* < .01.

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Table 4. *Fixed-Effects MANOVA results for primary dependent variables.*

	Source	Dependent Variable	Sum of Squares	*df*	Mean Square	*F*	*p*	η²
Main Effect	Descriptive Norm Framing							
		Interest in Nursing	5.34	2.00	2.67	1.03	.36	.01
		Positive Impressions of Nursing	.12	2.00	.06	.09	.92	.00
		Perceived Masculinity of Nursing	.68	2.00	.34	1.08	.34	.01
		Interest in Female-Dominated Careers	.07	2.00	.03	.02	.98	.00
Main Effect	Injunctive Norm Framing							
		Interest in Nursing	.13	2.00	.07	.03	.97	.00
		Positive Impressions of Nursing	1.31	2.00	.66	.97	.38	.01
		Perceived Masculinity of Nursing	.50	2.00	.25	.80	.45	.00
		Interest in Female-Dominated Careers	5.33	2.00	2.66	1.63	.20	.01
Interaction	A x B							
		Interest in Nursing	3.86	4.00	.96	.37	.83	.00
		Positive Impressions of Nursing	2.74	4.00	.69	1.01	.40	.01
		Perceived Masculinity of Nursing	3.53	4.00	.88	2.82	.03	.03
		Interest in Female-Dominated Careers	5.97	4.00	1.49	.91	.46	.01
Error	S/AB							
		Interest in Nursing	866.56	333.00	2.60			
		Positive Impressions of Nursing	226.10	333.00	.68			
		Perceived Masculinity of Nursing	104.16	333.00	.31			
		Interest in Female-Dominated Careers	544.56	333.00	1.64			
Corrected Total								
		Interest in Nursing	876.75					
		Positive Impressions of Nursing	230.06					
		Perceived Masculinity of Nursing	108.96					
		Interest in Female-Dominated Careers	556.39					

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Table 5. *Multiple regression output for descriptive norm framing, injunctive norm framing, and communal goal endorsement predicting interest in nursing.*

Variable	B	SE B	β
Intercept	3.44	.22	
Static Descriptive Norm Framing	.15	.33	.05
Dynamic Descriptive Norm Framing	.47	.34	.13
Low Compatibility Injunctive Norm Framing	-.07	.33	-.02
High Compatibility Injunctive Norm Framing	.32	.35	.09
Communal Goal Endorsement	.21	.16	.14
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.12	.49	.02
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.39	.50	-.08
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.19	.49	.04
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.35	.52	-.06
Static Descriptive Norm FramingXCommunal Goal Endorsement	.28	.21	.10
Dynamic Descriptive Norm FramingXCommunal Goal Endorsement	.51	.19	.20**
Low Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	-.05	.19	-.02
High Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	-.25	.20	-.10
R^2		.31	
F Change in R^2		2.58**	

Note. * $p < .05$. ** $p < .01$.

Table 6. *Multiple regression output for descriptive norm framing, injunctive norm framing, and communal goal endorsement predicting positive impressions of nursing.*

Variable	B	SE B	β
Intercept	5.43	.11	
Static Descriptive Norm Framing	-.05	.16	-.03
Dynamic Descriptive Norm Framing	.01	.17	.01
Low Compatibility Injunctive Norm Framing	.04	.16	.02
High Compatibility Injunctive Norm Framing	.19	.17	.10
Communal Goal Endorsement	.37	.08	.48
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.27	.24	.10
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.21	.25	-.08
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.18	.24	.07
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.05	.26	-.02
Static Descriptive Norm FramingXCommunal Goal Endorsement	-.04	.10	-.02
Dynamic Descriptive Norm FramingXCommunal Goal Endorsement	.08	.09	.06
Low Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	-.27	.10	-.21**
High Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	-.09	.10	-.06
R^2		.40	
F Change in R^2		4.73**	

Note. * $p < .05$. ** $p < .01$.

Table 7. *Multiple regression output for descriptive norm framing, injunctive norm framing, and communal goal endorsement predicting perceived masculinity of nursing.*

Variable	B	SE B	β
Intercept	3.31	.08	
Static Descriptive Norm Framing	-.17	.11	-.14
Dynamic Descriptive Norm Framing	.01	.12	.01
Low Compatibility Injunctive Norm Framing	-.29	.12	-.24*
High Compatibility Injunctive Norm Framing	-.09	.12	-.07
Communal Goal Endorsement	.05	.06	.10
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.54	.17	.28**
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.04	.17	-.02
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.33	.17	.19
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	.06	.18	.03
Static Descriptive Norm FramingXCommunal Goal Endorsement	.16	.07	.16*
Dynamic Descriptive Norm FramingXCommunal Goal Endorsement	.13	.07	.15
Low Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	-.11	.07	-.13
High Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	-.01	.07	-.01
R^2		.33	
F Change in R^2		3.01**	

Note. * $p < .05$. ** $p < .01$.

Table 8. *Multiple regression output for descriptive norm framing, injunctive norm framing, and communal goal endorsement predicting interest in female-dominated careers.*

Variable	B	SE B	β
Intercept	3.32	.18	
Static Descriptive Norm Framing	-.04	.26	-.01
Dynamic Descriptive Norm Framing	-.21	.27	-.08
Low Compatibility Injunctive Norm Framing	-.52	.27	-.19
High Compatibility Injunctive Norm Framing	-.06	.28	-.02
Communal Goal Endorsement	.06	.13	.05
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.11	.40	.02
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.12	.40	-.03
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.69	.40	.17
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	.11	.42	.03
Static Descriptive Norm FramingXCommunal Goal Endorsement	.36	.17	.16*
Dynamic Descriptive Norm FramingXCommunal Goal Endorsement	.07	.15	.03
Low Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	.09	.16	.05
High Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	-.04	.16	-.02
R^2		.26	
F Change in R^2		1.78*	

Note. * $p < .05$. ** $p < .01$.

Table 9. *Multiple regression output for descriptive norm framing, injunctive norm framing, and endorsement of traditional male role norms predicting interest in nursing.*

Variable	B	SE B	β
Intercept	3.47	.23	
Static Descriptive Norm Framing	.11	.34	.03
Dynamic Descriptive Norm Framing	.41	.35	.12
Low Compatibility Injunctive Norm Framing	-.13	.34	-.04
High Compatibility Injunctive Norm Framing	.26	.36	.07
Endorsement of Traditional Male Role Norms	.06	.16	.04
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.22	.51	.04
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.25	.52	-.05
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.14	.51	.03
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.47	.53	-.09
Static Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	.14	.19	.06
Dynamic Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	-.09	.20	-.03
Low Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	-.09	.18	-.03
High Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	-.18	.20	-.06
R^2		.14	
F Change in R^2		.48	

Note. * $p < .05$. ** $p < .01$.

Table 10. *Multiple regression output for descriptive norm framing, injunctive norm framing, and endorsement of traditional male role norms predicting positive impressions of nursing.*

Variable	B	SE B	β
Intercept	5.50	.11	
Static Descriptive Norm Framing	-.07	.17	-.04
Dynamic Descriptive Norm Framing	-.07	.17	-.04
Low Compatibility Injunctive Norm Framing	-.01	.17	-.01
High Compatibility Injunctive Norm Framing	.14	.18	.08
Endorsement of Traditional Male Role Norms	-.28	.08	-.39**
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.28	.25	.10
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.17	.26	-.06
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.21	.25	.08
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.15	.26	-.06
Static Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	.18	.09	.14
Dynamic Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	.06	.10	.04
Low Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	.03	.09	.02
High Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	.07	.10	.05
R^2		.30	
F Change in R^2		2.45**	

Note. * $p < .05$. ** $p < .01$.

Table 11. *Multiple regression output for descriptive norm framing, injunctive norm framing, and endorsement of traditional male role norms predicting perceived masculinity of nursing.*

Variable	B	SE B	β
Intercept	3.33	.08	
Static Descriptive Norm Framing	-.16	.12	-.13
Dynamic Descriptive Norm Framing	-.01	.12	-.01
Low Compatibility Injunctive Norm Framing	-.28	.12	-.23*
High Compatibility Injunctive Norm Framing	-.13	.13	-.10
Endorsement of Traditional Male Role Norms	-.09	.05	-.18
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.51	.18	.27**
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.01	.18	.00
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.31	.17	.17
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	.03	.18	.01
Static Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	.07	.06	.09
Dynamic Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	.06	.07	.07
Low Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	.02	.06	.02
High Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	-.09	.07	-.09
R^2		.27	
F Change in R^2		1.94*	

Note. * $p < .05$. ** $p < .01$.

Table 12. *Multiple regression output for descriptive norm framing, injunctive norm framing, and endorsement of traditional male role norms predicting interest in female-dominated careers.*

Variable	B	SE B	β
Intercept	3.31	.18	
Static Descriptive Norm Framing	.05	.27	.02
Dynamic Descriptive Norm Framing	-.21	.27	-.08
Low Compatibility Injunctive Norm Framing	-.59	.27	-.22*
High Compatibility Injunctive Norm Framing	-.02	.28	-.01
Endorsement of Traditional Male Role Norms	.32	.12	.28**
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.14	.40	.03
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.25	.41	-.06
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	.71	.40	.18
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	.02	.42	.00
Static Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	-.47	.15	-.25**
Dynamic Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	-.24	.16	-.11
Low Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	-.12	.14	-.06
High Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	-.24	.16	-.11
R^2		.25	
F Change in R^2		1.62	

Note. * $p < .05$. ** $p < .01$.

Table 13. *Fixed-Effects MANOVA results for primary and exploratory dependent variables.*

	Source	Dependent Variable	Sum of Squares	*df*	Mean Square	*F*	*p*	η^2
Main Effect	Descriptive Norm Framing							
		Interest in Nursing	5.34	2.00	2.67	1.03	.36	.01
		Positive Impressions of Nursing	.12	2.00	.06	.09	.92	.00
		Perceived Masculinity of Nursing	.68	2.00	.34	1.08	.34	.01
		Interest in Female-Dominated Careers	.07	2.00	.03	.02	.98	.00
		Interest in Male-Dominated Careers	5.30	2.00	2.65	.98	.38	.01
		Interest in Gender Balanced Careers	.80	2.00	.40	.31	.73	.00
		Future Family vs. Career Orientation	13.73	2.00	6.87	3.99	.02	.02
Main Effect	Injunctive Norm Framing							
		Interest in Nursing	.13	2.00	.07	.03	.97	.00
		Positive Impressions of Nursing	1.31	2.00	.66	.97	.38	.01
		Perceived Masculinity of Nursing	.50	2.00	.25	.80	.45	.00
		Interest in Female-Dominated Careers	5.33	2.00	2.66	1.63	.20	.01
		Interest in Male-Dominated Careers	3.16	2.00	1.58	.58	.56	.00
		Interest in Gender Balanced Careers	3.55	2.00	1.77	1.37	.25	.01
		Future Family vs. Career Orientation	.88	2.00	.44	.25	.78	.00
Interaction	A x B							
		Interest in Nursing	3.86	4.00	.96	.37	.83	.00
		Positive Impressions of Nursing	2.74	4.00	.69	1.01	.40	.01
		Perceived Masculinity of Nursing	3.53	4.00	.88	2.82	.03	.03
		Interest in Female-Dominated Careers	5.97	4.00	1.49	.91	.46	.01
		Interest in Male-Dominated Careers	8.25	4.00	2.06	.76	.55	.01
		Interest in Gender Balanced Careers	1.65	4.00	.41	.32	.86	.00
		Future Family vs. Career Orientation	5.81	4.00	1.45	.84	.50	.01
Error	S/AB							
		Interest in Nursing	866.56	333.00	2.60			
		Positive Impressions of Nursing	226.10	333.00	.68			
		Perceived Masculinity of Nursing	104.16	333.00	.31			
		Interest in Female-Dominated Careers	544.56	333.00	1.64			
		Interest in Male-Dominated Careers	902.88	333.00	2.71			
		Interest in Gender Balanced Careers	429.75	333.00	1.29			
		Future Family vs. Career Orientation	573.00	333.00	1.72			
Corrected Total								
		Interest in Nursing	876.75					
		Positive Impressions of Nursing	230.06					
		Perceived Masculinity of Nursing	108.96					
		Interest in Female-Dominated Careers	556.39					
		Interest in Male-Dominated Careers	920.98					
		Interest in Gender Balanced Careers	436.02					
		Future Family vs. Career Orientation	592.99					

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Table 14. *Multiple regression output for descriptive norm framing, injunctive norm framing, and communal goal endorsement predicting interest in male-dominated careers.*

Variable	B	SE B	β
Intercept	3.28	.23	
Static Descriptive Norm Framing	.58	.34	.17
Dynamic Descriptive Norm Framing	.41	.35	.12
Low Compatibility Injunctive Norm Framing	.40	.34	.11
High Compatibility Injunctive Norm Framing	.39	.36	.11
Communal Goal Endorsement	-.50	.17	-.33**
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.58	.51	-.10
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.41	.51	-.08
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.47	.51	-.09
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	.02	.54	.00
Static Descriptive Norm FramingXCommunal Goal Endorsement	-.23	.21	-.08
Dynamic Descriptive Norm FramingXCommunal Goal Endorsement	.26	.20	.10
Low Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	.43	.20	.17*
High Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	.24	.21	.09
R^2		.28	
F Change in R^2		2.11*	

Note. * $p < .05$. ** $p < .01$.

Table 15. *Multiple regression output for descriptive norm framing, injunctive norm framing, and communal goal endorsement predicting interest in gender balanced careers.*

Variable	B	SE B	β
Intercept	3.47	.16	
Static Descriptive Norm Framing	.17	.24	.07
Dynamic Descriptive Norm Framing	.27	.25	.11
Low Compatibility Injunctive Norm Framing	-.07	.24	-.03
High Compatibility Injunctive Norm Framing	.35	.26	.14
Communal Goal Endorsement	-.05	.12	-.04
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.10	.36	-.03
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.28	.36	-.08
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.06	.36	-.02
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.39	.38	-.10
Static Descriptive Norm FramingXCommunal Goal Endorsement	-.07	.15	-.03
Dynamic Descriptive Norm FramingXCommunal Goal Endorsement	.07	.14	.04
Low Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	.22	.14	.12
High Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	-.01	.15	-.01
R^2		.17	
F Change in R^2		.77	

Note. * $p < .05$. ** $p < .01$.

Table 16. *Multiple regression output for descriptive norm framing, injunctive norm framing, and communal goal endorsement predicting future family vs. career orientation.*

Variable	B	SE B	β
Intercept	3.90	.18	
Static Descriptive Norm Framing	-.10	.27	-.04
Dynamic Descriptive Norm Framing	.29	.28	.10
Low Compatibility Injunctive Norm Framing	.40	.28	.14
High Compatibility Injunctive Norm Framing	.20	.29	.07
Communal Goal Endorsement	.00	.13	.00
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.61	.41	-.14
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.03	.41	-.01
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.49	.41	-.12
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.22	.43	-.05
Static Descriptive Norm FramingXCommunal Goal Endorsement	-.13	.17	-.05
Dynamic Descriptive Norm FramingXCommunal Goal Endorsement	-.18	.16	-.09
Low Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	-.25	.16	-.12
High Compatibility Injunctive Norm FramingXCommunal Goal Endorsement	-.16	.17	-.07
R^2		.29	
F Change in R^2		2.30**	

Note. $* p < .05$. $** p < .01$.

Table 17. *Multiple regression output for descriptive norm framing, injunctive norm framing, and endorsement of traditional male role norms predicting interest in male-dominated careers.*

Variable	B	SE B	β
Intercept	3.21	.23	
Static Descriptive Norm Framing	.58	.34	.17
Dynamic Descriptive Norm Framing	.50	.36	.14
Low Compatibility Injunctive Norm Framing	.48	.35	.14
High Compatibility Injunctive Norm Framing	.52	.37	.15
Endorsement of Traditional Male Role Norms	.02	.16	.02
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.61	.52	-.11
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.42	.53	-.08
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.60	.51	-.12
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.01	.54	.00
Static Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	.02	.19	.01
Dynamic Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	.01	.20	.00
Low Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	.06	.19	.02
High Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	.45	.20	.15*
R^2		.22	
F Change in R^2		1.24	

Note. * $p < .05$. ** $p < .01$.

Table 18. *Multiple regression output for descriptive norm framing, injunctive norm framing, and endorsement of traditional male role norms predicting interest in gender balanced careers.*

Variable	B	SE B	β
Intercept	3.47	.16	
Static Descriptive Norm Framing	.18	.24	.08
Dynamic Descriptive Norm Framing	.27	.25	.11
Low Compatibility Injunctive Norm Framing	-.13	.24	-.05
High Compatibility Injunctive Norm Framing	.41	.26	.17
Endorsement of Traditional Male Role Norms	.01	.11	.01
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.04	.36	-.01
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.32	.37	-.09
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.06	.36	-.02
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.40	.37	-.11
Static Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	-.09	.13	-.05
Dynamic Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	-.07	.14	-.03
Low Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	.19	.13	.10
High Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	.28	.14	.14*
R^2		.19	
F Change in R^2		.97	

Note. * $p < .05$. ** $p < .01$.

Table 19. *Multiple regression output for descriptive norm framing, injunctive norm framing, and endorsement of traditional male role norms predicting future family vs. career orientation.*

Variable	B	SE B	β
Intercept	3.90	.18	
Static Descriptive Norm Framing	-.11	.27	-.04
Dynamic Descriptive Norm Framing	.28	.28	.10
Low Compatibility Injunctive Norm Framing	.47	.28	.17
High Compatibility Injunctive Norm Framing	.06	.29	.02
Endorsement of Traditional Male Role Norms	-.29	.12	-.25*
Static Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.70	.41	-.16
Static Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.01	.42	.00
Dynamic Descriptive Norm FramingXLow Compatibility Injunctive Norm Framing	-.46	.41	-.11
Dynamic Descriptive Norm FramingXHigh Compatibility Injunctive Norm Framing	-.02	.43	-.01
Static Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	.25	.15	.13
Dynamic Descriptive Norm FramingXEndorsement of Traditional Male Role Norms	.07	.16	.03
Low Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	.19	.15	.09
High Compatibility Injunctive Norm FramingXEndorsement of Traditional Male Role Norms	-.08	.16	-.03
R^2		.25	
F Change in R^2		1.67	

Note. * $p < .05$. ** $p < .01$.
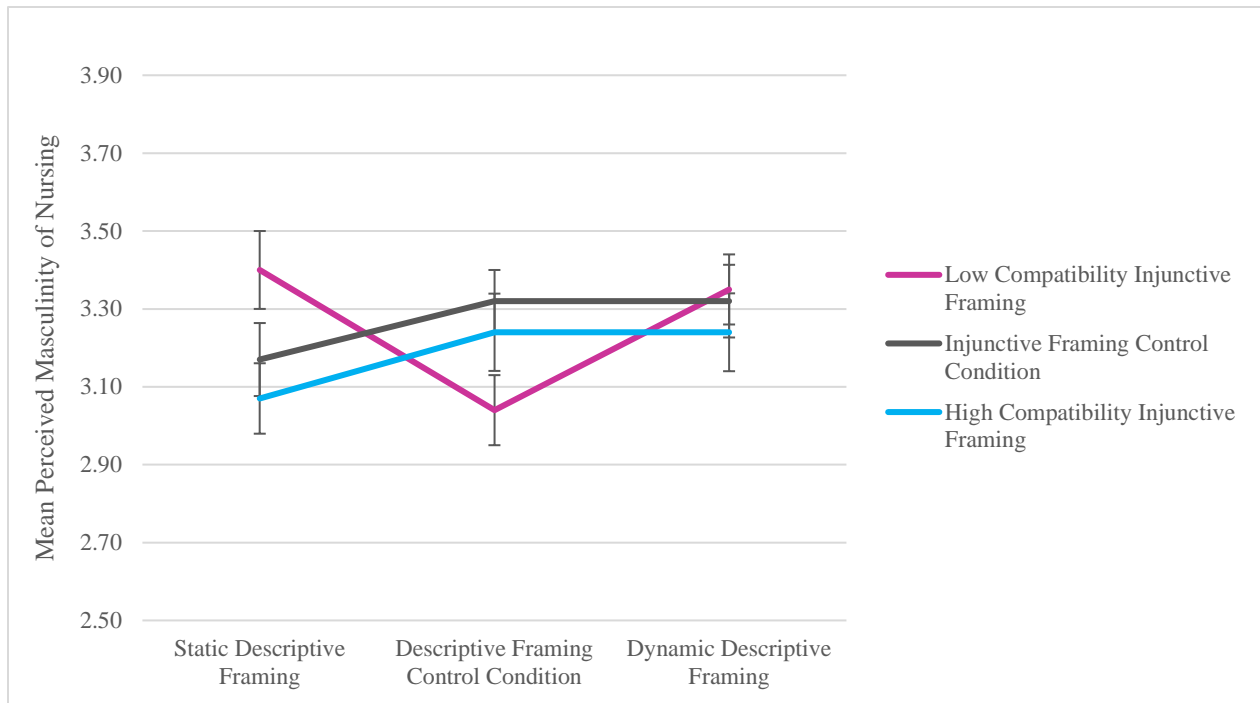
Figure 1. *The effects of descriptive norm framing and injunctive norm framing on perceived masculinity of nursing.*
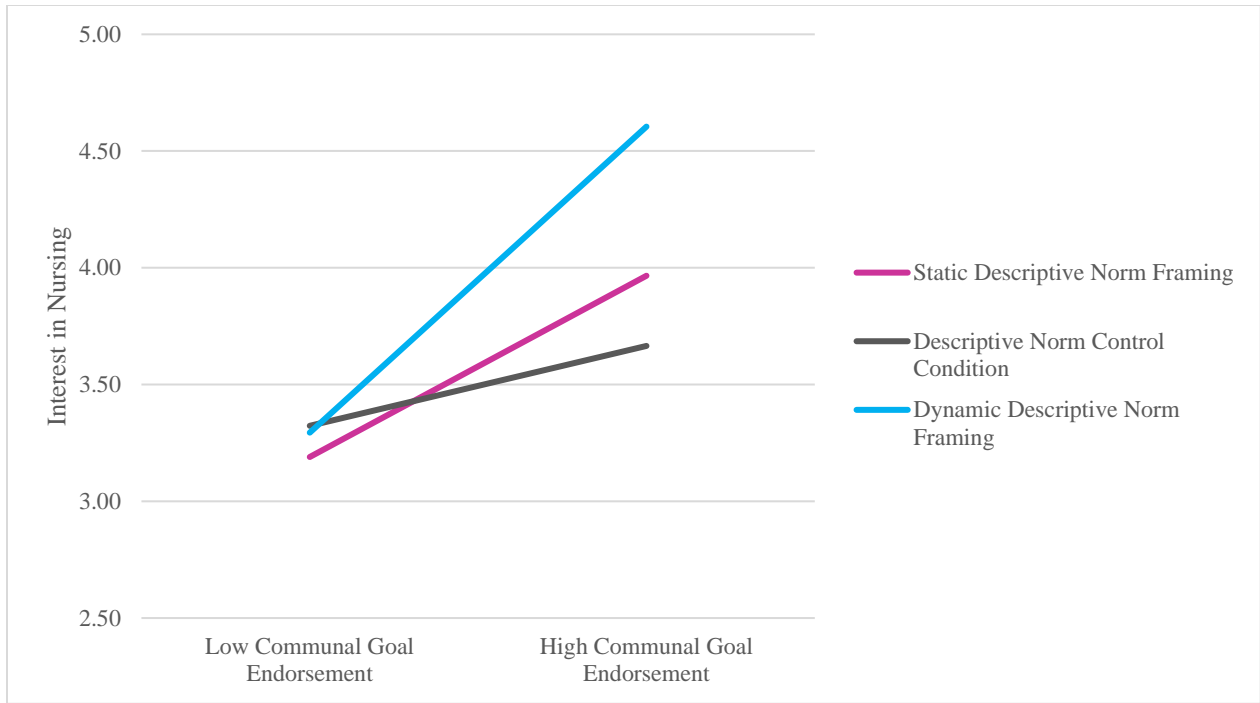
Figure 2. *Interest in nursing regressed on the two-way descriptive norm framing X communal goal endorsement interaction.*
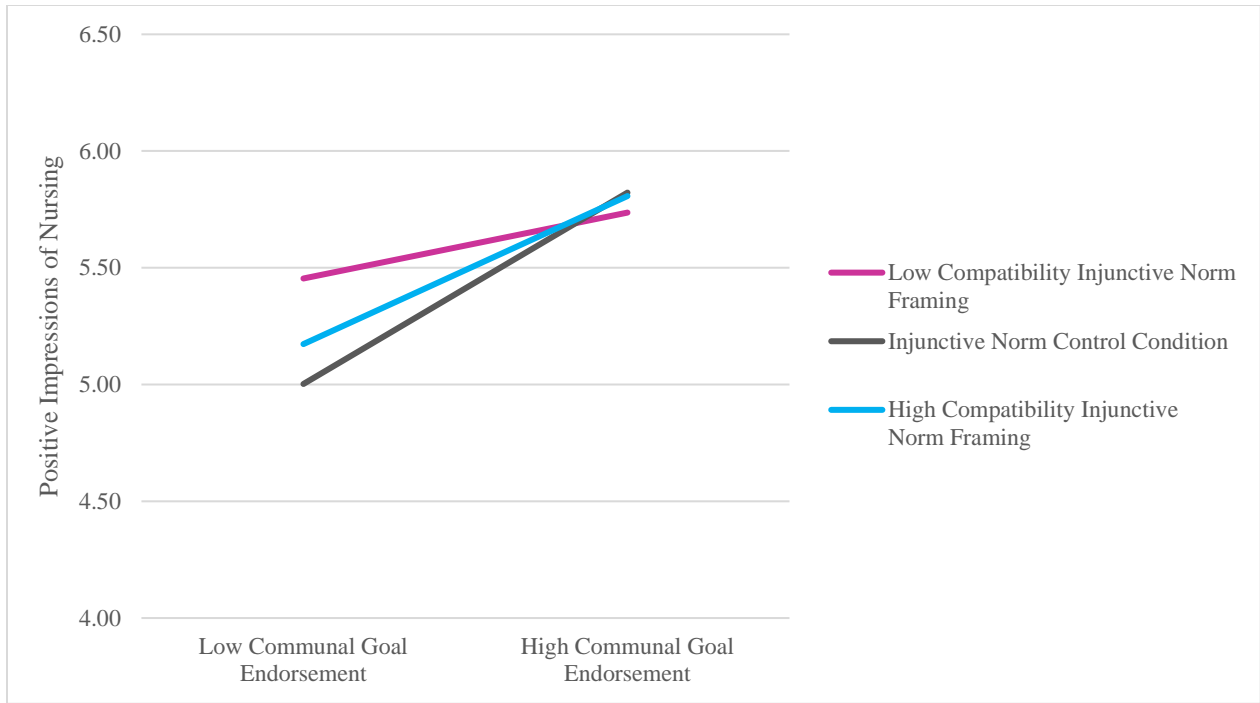
Figure 3. *Positive impressions of nursing regressed on the two-way injunctive norm framing X communal goal endorsement interaction.*
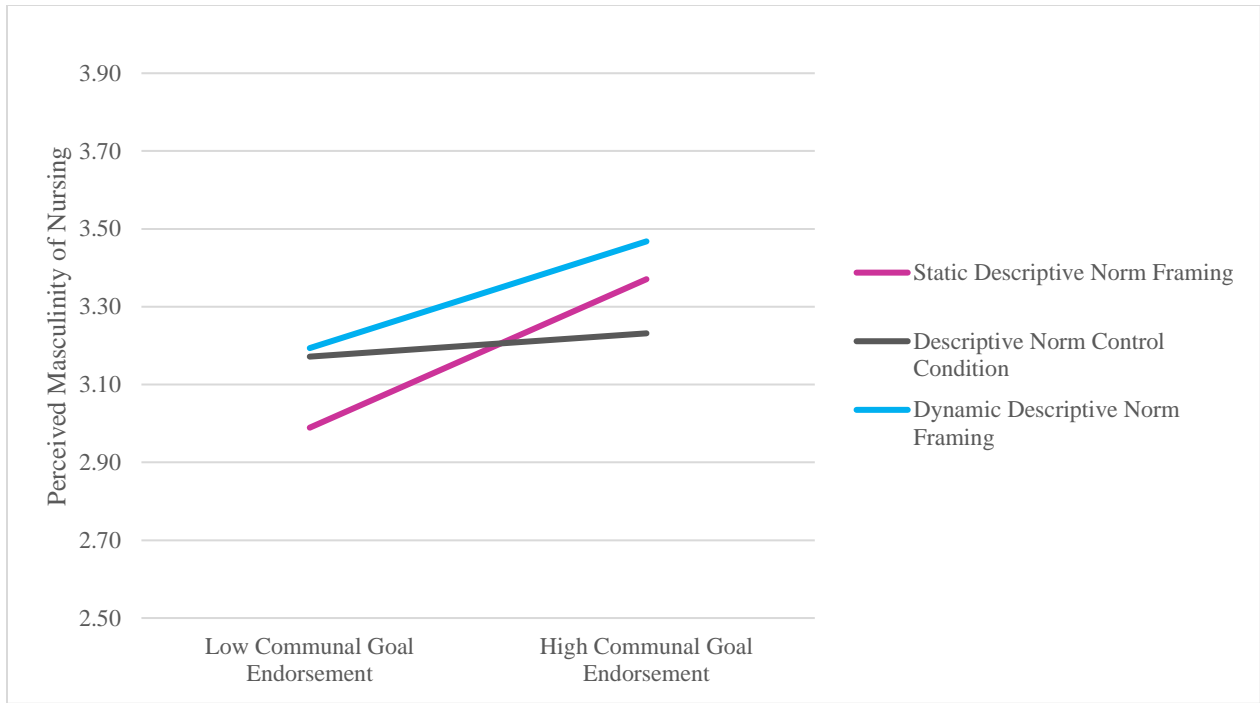
Figure 4. *Perceived masculinity of nursing regressed on the two-way descriptive norm framing X communal goal endorsement interaction.*
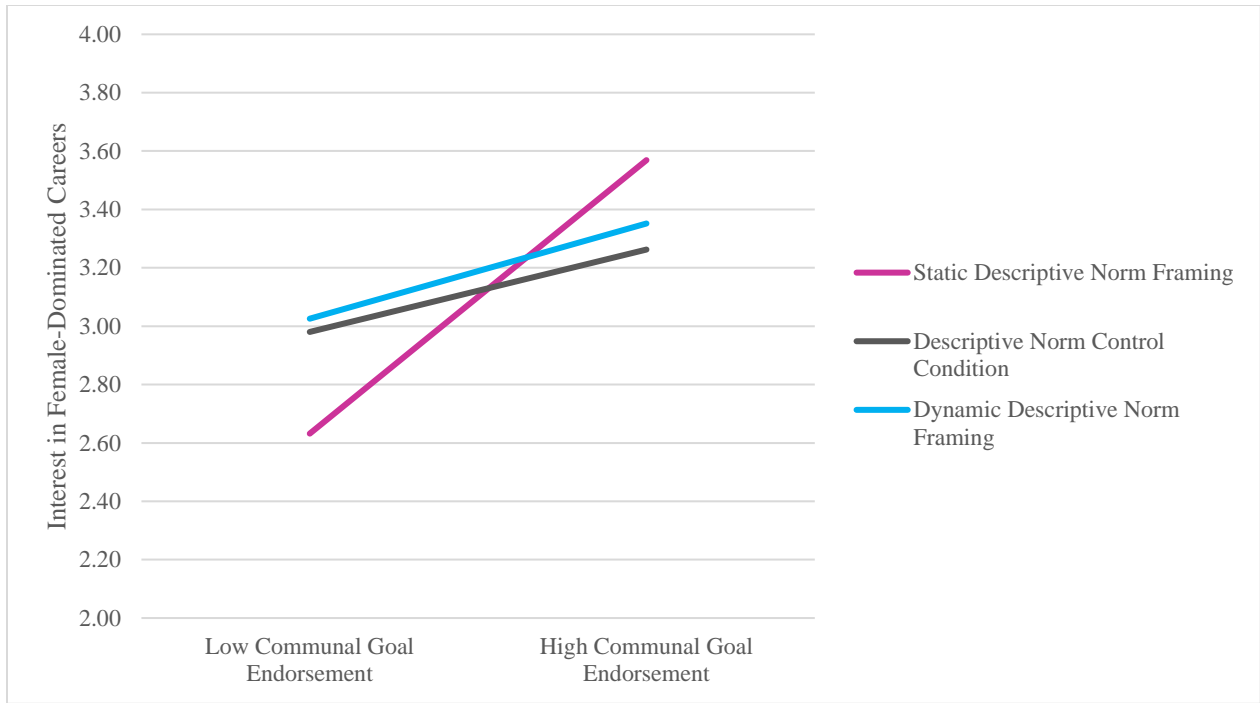
Figure 5. *Interest in female-dominated careers regressed on the two-way descriptive norm framing X communal goal endorsement interaction.*

Figure 6. *Interest in female-dominated careers regressed on the two-way descriptive norm framing X endorsement of traditional male role norms interaction.*

Figure 7. *The effects of descriptive norm framing and injunctive norm framing on future family versus career orientation.*
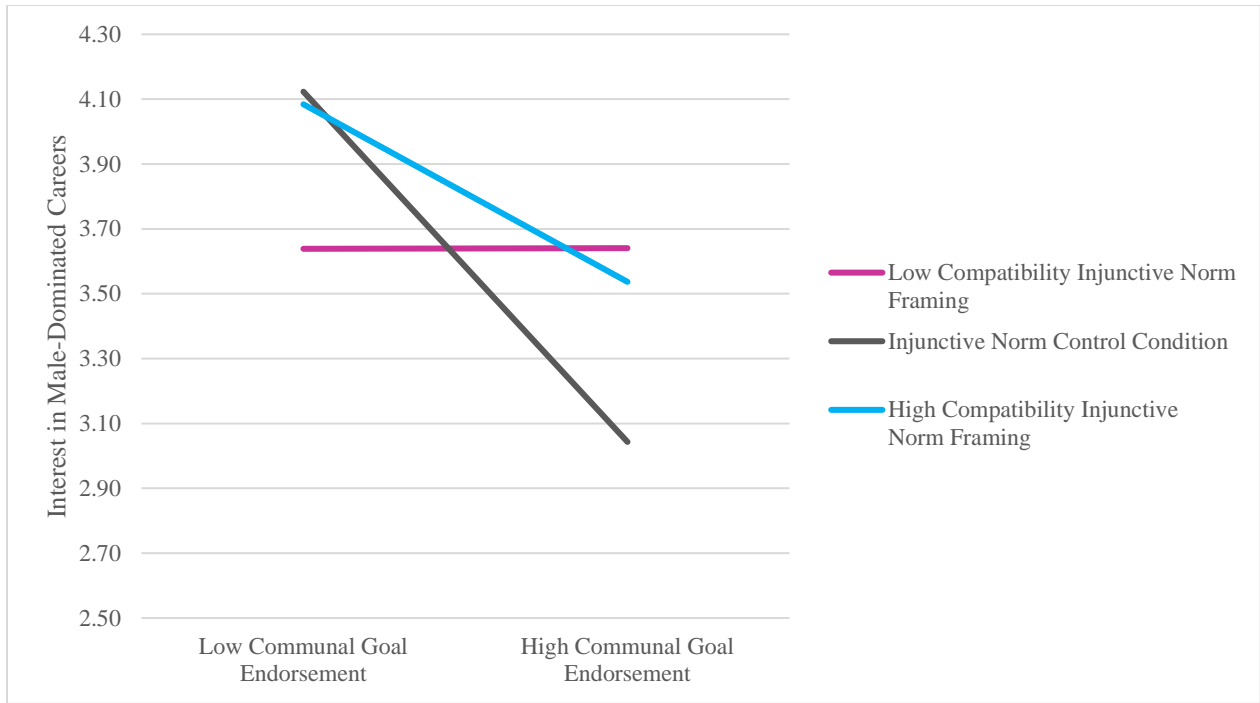
Figure 8. *Interest in male-dominated careers regressed on the two-way injunctive norm framing X communal goal endorsement interaction.*
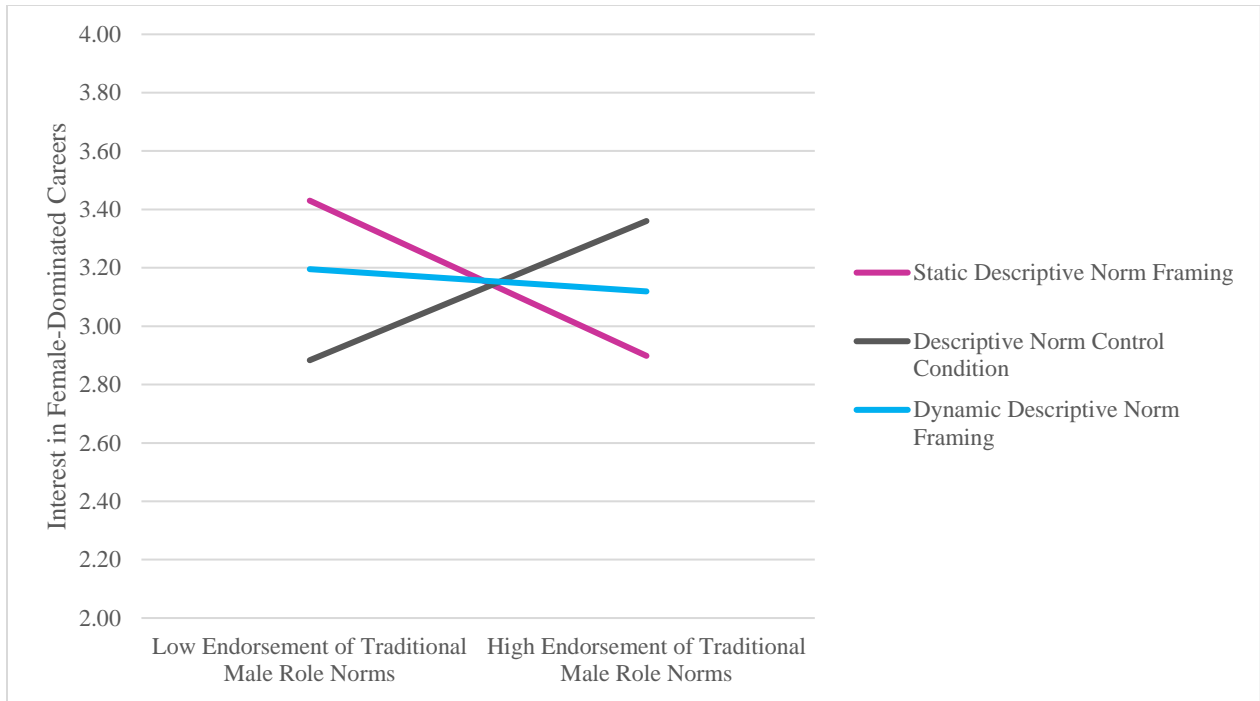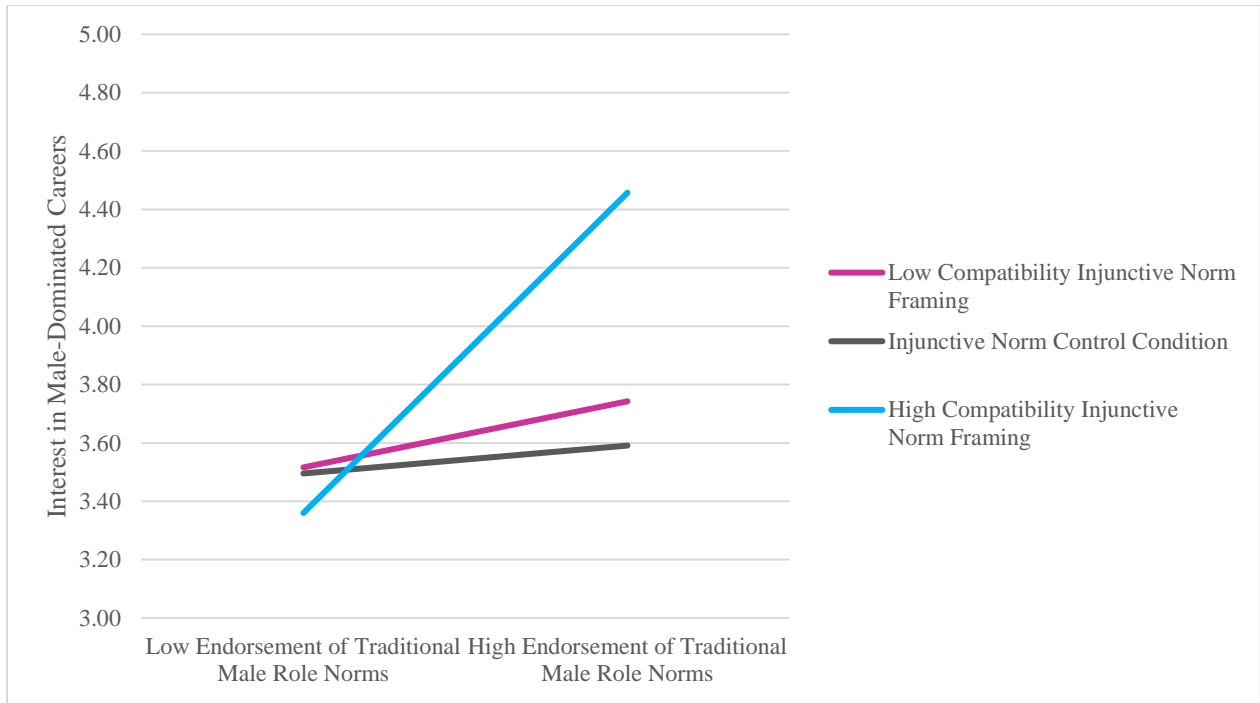
Figure 9. *Interest in male-dominated careers regressed on the two-way injunctive norm framing X endorsement of male role norms interaction.*

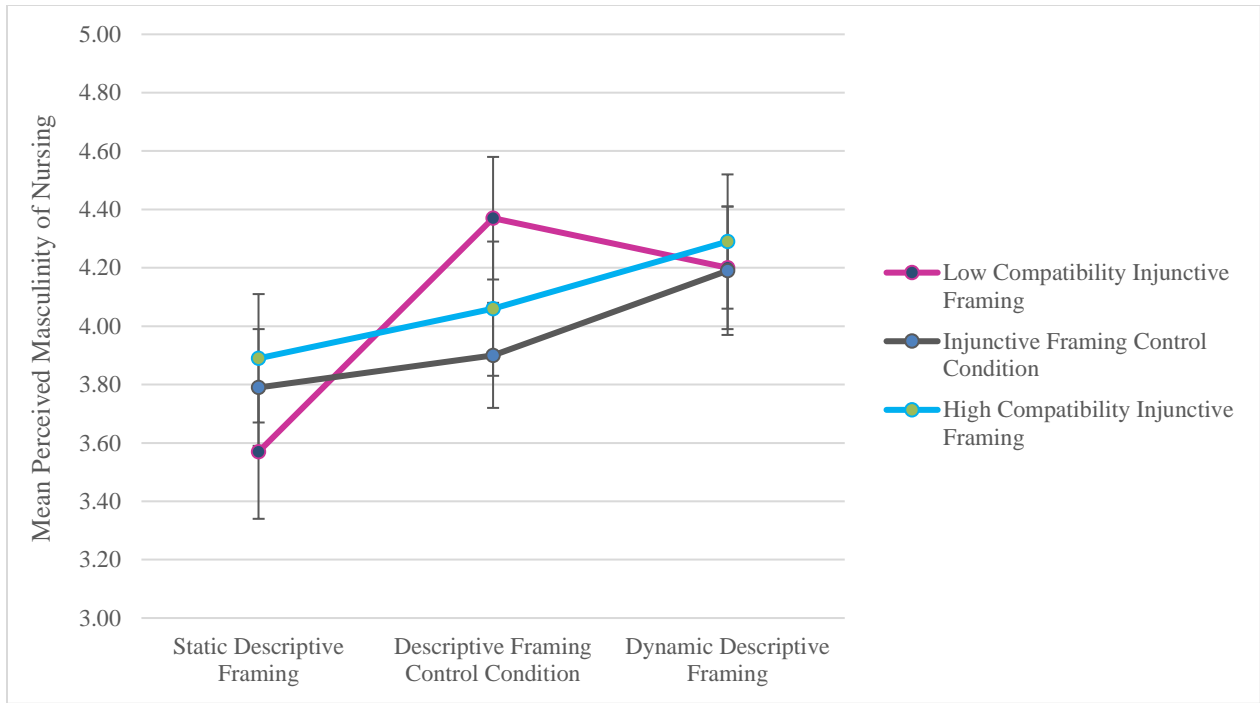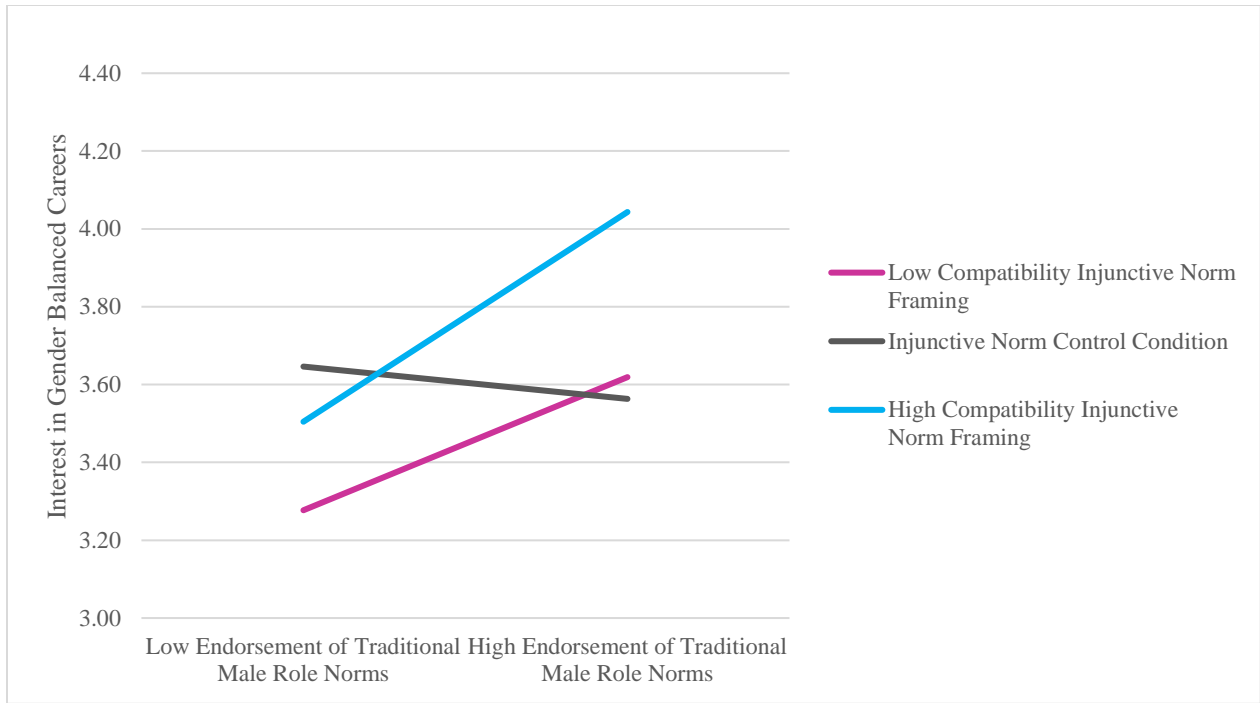Figure 10. *Interest in gender balanced careers regressed on the two-way injunctive norm framing X endorsement of male role norms interaction.*

<div align="center">**References**</div>

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Appendices

Appendix A: **Nursing Estimations**

1. Give us your best guess: what do you estimate is the median annual salary for nurses currently working in the United States?

2. Give us your best guess: of all the nurses currently working in the United States, what percent do you think are men?

Appendix B: Communal and Agentic Goal Endorsement Measure

Using the scale below, please rate how important each of the following kinds of goals is to you personally.

1	2	3	4	5	6	7
Not at all important						Extremely important

Agentic goals
1. Having power over others
2. Getting recognition
3. Demonstrating achievement
4. Promoting yourself
5. Pursuing independence
6. Achieving status
7. Competing with others

Communal goals
8. Helping others
9. Serving humanity
10. Working with people
11. Connecting with others
12. Attending to others
13. Caring for others
14. Developing intimate relationships

* *Note* All items were made into gerund phrases.

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Appendix C: **Male Role Norms Inventory - Short Form (MRNI-SF)**

Using the following scale, choose the number that shows how much you agree or disagree with each statement.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

1. A man should never admit when others hurt his feelings.
2. Men should be detached in emotionally charged situations.
3. Men should not be too quick to tell others that they care about them.
4. Men should have home improvement skills.
5. Men should be able to fix most things around the house.
6. A man should know how to repair his car if it should break down.
7. Men should watch football games instead of soap operas.
8. A man should prefer watching action movies to reading romantic novels.
9. Boys should prefer to play with trucks rather than dolls.
10. Men should always like to have sex.
11. A man should not turn down sex.
12. A man should always be ready for sex.
13. The President of the U.S. should always be a man.
14. Men should be the leader in any group.
15. A man should always be the boss.
16. It is important for a man to take risks, even if he might get hurt.
17. When the going gets tough, men should get tough.
18. I think a young man should try to be physically tough, even if he's not big.

* *Note* Items associated with the Negativity toward Sexual Minorities (NT) factor were removed.

Levant, R. F., Hall, R. J., & Rankin, T. J. (2013). Male Role Norms Inventory–Short Form (MRNI-SF): Development, confirmatory factor analytic investigation of structure, and measurement invariance across gender. *Journal of Counseling Psychology*, *60*(2), 228.

Appendix D: Dynamic Descriptive Norms Article

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U.S.

To Solve Nursing Shortages, Recruiters Are Turning to Men

Amid a retirement wave and regional shortages, the job market is heating up – especially for men

Stethoscopes hang in a nurses station at an Illinois hospital last month. PHOTO: DANIEL ACKER/BLOOMBERG

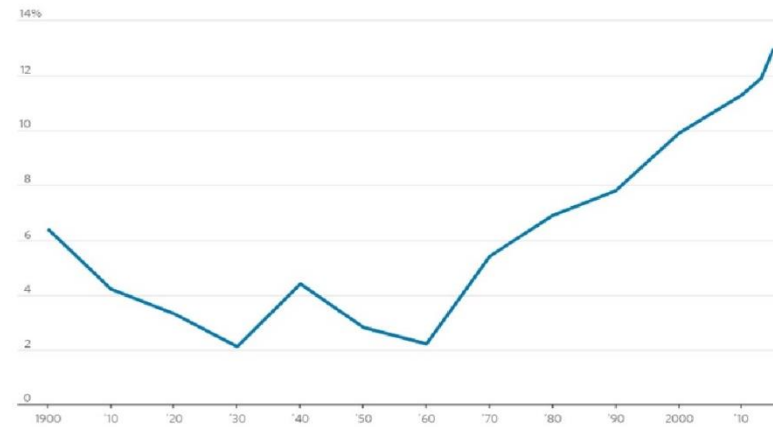By *Kyle McCloskey*
Updated Nov. 7, 2017 7:08 a.m. ET

After years of relative stability, the job market for nurses is heating up, driving up the median annual salary for the nation's fifth-largest occupation to over $50,000. The growth of this career is presenting everyone in the United Stated with new opportunities, but men could especially benefit from becoming nurses.

The last nursing shortage more than a decade ago ended when a surge of nursing graduates filled many positions, and the financial crisis of 2008 led older nurses to delay retirement. But as the economy improves, nurses who held on to jobs through the uneven recovery are now retiring or cutting back hours, say recruiters. The departures come as the need for nurses has increased thanks to expanded insurance coverage from job growth.

Projections based on analysis of demographic trends and nursing graduation rates show that hospitals will likely struggle throughout the coming decade to meet the growing demand for nurses. This growing demand is leading employers to incentivize prospective nurses with tuition assistance, flexible hours, and hefty signing bonuses. Recruiters are also pinning their hopes of easing the staffing shortage on the single demographic group with the sheer numbers to make a difference: men.

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Rise of Men in Nursing

The number of male nurses has grown exponentially since the 1960s. Share of nurses who are men:

Source: Census Bureau via Elizabeth Munnich and Abigail Wozniak

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Since 1960, the share of male nurses in the United States has more than quintupled to 13 percent and is still sharply on the rise. The industry is hoping to boost this growing percentage through targeted efforts to recruit men, concentrating on those with a background in medicine, like paramedics and orderlies, but also aiming at diverse areas ranging from finance to education.

Time will tell if more men will start to take advantage of the excellent opportunities offered by nursing careers.

Appendix E: Static Descriptive Norms Article

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Percentage of Men in Nursing

Despite growing demand, the vast majority of nurses are still women. Share of nurses who are men:

- Female Nurses
- Male Nurses

13%

87%

Source: Census Bureau via Elizabeth Munnich and Abigail Wozniak

THE WALL STREET JOURNAL

Today, the share of male nurses in the United States is still just 13 percent. The industry is hoping to increase this percentage through targeted efforts to recruit men, concentrating on those with a background in medicine, like paramedics and orderlies, but also aiming at diverse areas ranging from finance to education.

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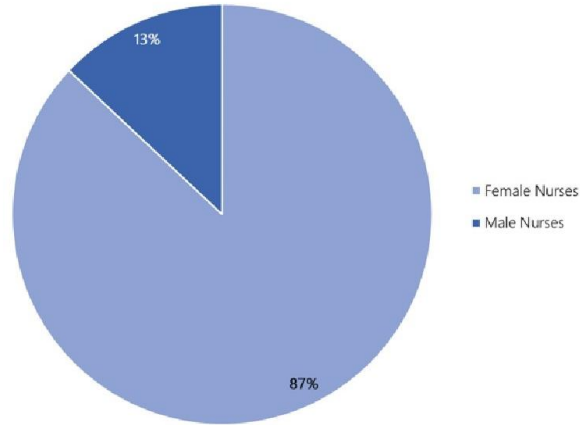
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Cameron Duncan, 31, is one of these recruits. Mr. Duncan got a business degree from Baruch College and went to work for a computer company, but he felt unfulfilled and fretted about job security. Six months later, he left for a position as a patient advocate at a New York hospital. He soon decided to go into nursing for the financial rewards. Last summer, he was hired as a night nurse in the transplant unit of New York University Medical Center.

The potential for job satisfaction is the message that the health care industry is trying to get across to men. According to Tom Schwarz, a registered nurse and editorial director of The American Journal of Nursing, "It's about doing an honest day's work for an honest day's pay."

Male nurses can be especially useful because of the physical strength required to lift patients and move medical equipment. Michael Cullen, a retired police officer who is a nurse with the Visiting Nurse Service of New York, is often asked to help move heavy patients. The Visiting Nurse Service says former police officers like Mr. Cullen, as well as former soldiers and firefighters, are ideal nursing candidates not only for their endurance but also for their long experience in thinking on their feet.

Nursing is definitely not for those averse to hard work. Many nurses spend 50 or even 60 hours a week navigating high-pressure situations, according to the American Nurse Association. Initially, Mr. Duncan wondered if he made the wrong career choice – but not for long. "I realized that nursing is not a gendered profession. It's just for people who want to be engaged in work that requires leadership and heroism."

Time will tell if more men will start to take advantage of the excellent opportunities offered by nursing careers.

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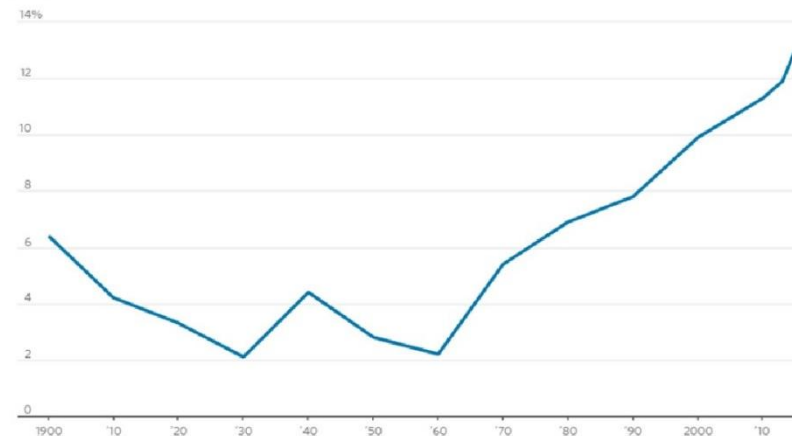
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Source: Census Bureau via Elizabeth Munnich and Abigail Wozniak

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U.S.

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Amid a retirement wave and regional shortages, the job market is heating up – especially for men

Stethoscopes hang in a nurses station at an Illinois hospital last month. PHOTO: DANIEL ACKER/BLOOMBERG

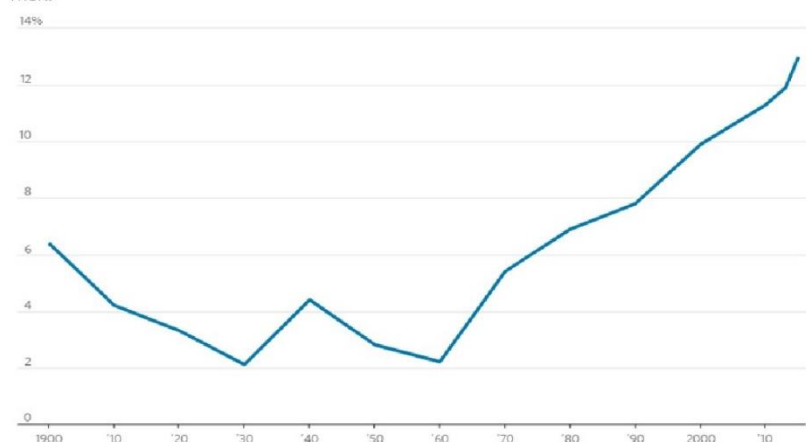By *Kyle McCloskey*
Updated Nov. 7, 2017 7:08 a.m. ET

After years of relative stability, the job market for nurses is heating up, driving up the median annual salary for the nation's fifth-largest occupation to over $50,000. The growth of this career is presenting everyone in the United Stated with new opportunities, but men could especially benefit from becoming nurses.

The last nursing shortage more than a decade ago ended when a surge of nursing graduates filled many positions, and the financial crisis of 2008 led older nurses to delay retirement. But as the economy improves, nurses who held on to jobs through the uneven recovery are now retiring or cutting back hours, say recruiters. The departures come as the need for nurses has increased thanks to expanded insurance coverage from job growth.

Projections based on analysis of demographic trends and nursing graduation rates show that hospitals will likely struggle throughout the coming decade to meet the growing demand for nurses. This growing demand is leading employers to incentivize prospective nurses with tuition assistance, flexible hours, and hefty signing bonuses. Recruiters are also pinning their hopes of easing the staffing shortage on the single demographic group with the sheer numbers to make a difference: men.

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Rise of Men in Nursing

The number of male nurses has grown exponentially since the 1960s. Share of nurses who are men:

Source: Census Bureau via Elizabeth Munnich and Abigail Wozniak

Since 1960, the share of male nurses in the United States has more than quintupled to 13 percent and is still sharply on the rise. The industry is hoping to boost this growing percentage through targeted efforts to recruit men, concentrating on those with a background in medicine, like paramedics and orderlies, but also aiming at diverse areas ranging from finance to education.

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The potential for job satisfaction is the message that the health care industry is trying to get across to men. According to Tom Schwarz, a registered nurse and editorial director of The American Journal of Nursing, "It's about caring and giving back to your community."

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Nursing is definitely not for those averse to interacting with others. Many nurses spend 50 or even 60 hours a week tending to patients, according to the American Nurse Association. Initially, Mr. Duncan wondered if he made the wrong career choice – but not for long. "I realized that nursing is not a gendered profession. It's just for people who want to be engaged in work that requires compassion and selflessness."

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U.S.

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Amid a retirement wave and regional shortages, the job market is heating up – especially for men

Stethoscopes hang in a nurses station at an Illinois hospital last month. PHOTO: DANIEL ACKER/BLOOMBERG

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Percentage of Men in Nursing

Despite growing demand, the vast majority of nurses are still women. Share of nurses who are men:

- Female Nurses
- Male Nurses

13%

87%

Source: Census Bureau via Elizabeth Munnich and Abigail Wozniak

Today, the share of male nurses in the United States is still just 13 percent. The industry is hoping to increase this percentage through targeted efforts to recruit men, concentrating on those with a background in medicine, like paramedics and orderlies, but also aiming at diverse areas ranging from finance to education.

Cameron Duncan, 31, is one of these recruits. Mr. Duncan got a business degree from Baruch College and went to work for a computer company, but he felt unfulfilled and fretted about job security. Six months later, he left for a position as a patient advocate at a New York hospital. He soon decided to go into nursing for the financial rewards. Last summer, he was hired as a night nurse in the transplant unit of New York University Medical Center.

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Appendix K: Static Descriptive, Low Compatibility Injunctive Norms Article

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87%

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Appendix L: Endorsement of Nursing Measure

Using the scales below, please respond to the following statements and questions.

1. How interesting is a nursing career to you?[+]

1	2	3	4	5	6	7
Not at all interesting						Very interesting

2. I would be interested in learning more about nursing careers.[+]

1	2	3	4	5	6	7
Not at all interested						Very interested

3. How manly do you think other men would see you if you decided to become a nurse?[^]

1	2	3	4	5
A lot less manly	A little less manly	Their opinion of me would not change.	A little manlier	A lot manlier

4. How manly do you think women would see you if you decided to become a nurse?[^]

1	2	3	4	5
A lot less manly	A little less manly	Their opinion of me would not change.	A little manlier	A lot manlier

5. In general, how much do you think other people would respect you if you decided to become a nurse?[^]

1	2	3	4	5
They would lose a lot of respect for me.	They would lose a little respect for me.	Their opinion of me would not change.	They would gain a little respect for me.	They would gain a lot of respect for me.

6. Imagine that you have a son who is in the process of deciding the career path that he wants to take. How would you feel if he wanted to become a nurse?[#]

1	2	3	4	5	6	7
Very bothered			Neutral			Very enthusiastic

Now, we would like to know more about your opinions of nursing.

1. What is your impression of nursing careers?[#]

1	2	3	4	5	6	7
Not at all competitive						Very competitive

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2. What is your impression of nursing careers?[#]

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Not at all
prestigious

Very
prestigious

3. What is your impression of nursing careers?*[#]

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very
challenging

Not at all
challenging

4. What is your impression of nursing careers?[+]

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Not at all
appealing

Very
appealing

5. What is your impression of nursing careers?*^

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very
masculine

Very
feminine

6. What is your impression of nursing careers?[#]

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Not at all
rewarding

Very
rewarding

Now, we would like to know more about your opinions of nurses.

1. What is your impression of nurses?*[#]

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very
principled

Very
unprincipled

2. What is your impression of nurses?[#]

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very weak

Very
strong

3. What is your impression of nurses?*[#]

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very
intelligent

Very
unintelligent

4. What is your impression of nurses?[#]

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

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Very cold   Very warm

5. What is your impression of nurses?^
       1   2   3   4   5   6   7
      Very   Very
    feminine   masculine

6. What is your impression of nurses?*^#
       1   2   3   4   5   6   7
      Very   Not at all
    competent   competent

* *Note* Items with an asterisk require reverse scoring.

[+] *Note* Items with a plus sign form the interest in nursing subscale

[#] *Note* Items with a pound sign form the positive perceptions of nursing subscale

[^] *Note* Items with a carat form the perceived masculinity of nursing subscale

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Appendix M: Career Ratings Measure

Using the scale below, please rate how difficult or easy it is to imagine yourself in each of the following careers.

1	2	3	4	5	6	7
Extremely difficult						Extremely easy

1. Computer system architect
2. Industrial engineer
3. Software developer
4. Mechanical engineer
5. Kindergarten teacher
6. Social worker
7. Special education teacher
8. Nurse
9. News correspondent
10. Lawyer
11. Laboratory technician
12. College professor

Using the scale below, please rate how difficult or easy it is to imagine that each of the following careers would fulfill your personal goals.

1	2	3	4	5	6	7
Extremely difficult						Extremely easy

1. Computer system architect
2. Industrial engineer
3. Software developer
4. Mechanical engineer
5. Kindergarten teacher
6. Social worker
7. Special education teacher
8. Nurse
9. News correspondent
10. Lawyer
11. Laboratory technician
12. College professor

* *Note* Four careers that are equally occupied by men and women were added to these lists.
Block, K. (2015). *Men don't care for caring: fundamental goals and men's interest in HEED roles*. University of British Columbia.

Diekman, A. B., Brown, E. R., Johnston, A. M., & Clark, E. K. (2010). Seeking congruity between goals and roles: A new look at why women opt out of science, technology, engineering, and mathematics careers. *Psychological Science*, *21*(8), 1051-1057.

Appendix N: Future Family Versus Career Orientation Measure

Using the scale below, please indicate which is more important to you in terms of your future.

1	2	3	4	5	6	7
Having a family						Having a career

Using the scale below, please indicate which is more important to you in terms of your future.

1	2	3	4	5	6	7
Spending quality time with my future children						Having a satisfying job

Using the scale below, please indicate which is more important to you in terms of your future.

1	2	3	4	5	6	7
Having a happy and well-adjusted family						Reaching my full career potential

Durante, K. M., Griskevicius, V., Simpson, J. A., Cantú, S. M., & Tybur, J. M. (2012). Sex ratio and women's career choice: does a scarcity of men lead women to choose briefcase over baby?. *Journal of personality and social psychology*, *103*(1), 121.

Appendix O: Basic Attention Checks

1. For this item, select "4."

    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

2. For this item, select "2."

    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Appendix P: More Rigorous Attention Checks

1. According to the article that you just read, what is the median annual salary for nurses currently working in the United States?
   - $30,000
   - $40,000
   - $50,000
   - $60,000
   - This information was not provided in the article.

* *Note* For all participants, the correct answer to this item was $50,000.

2. According to the article that you just read, what percent of all the nurses currently working in the United States are men?
   - 3%
   - 13%
   - 23%
   - 33%
   - This information was not provided in the article.

* *Note* For participants who saw either the dynamic or static descriptive norm framing, the correct answer to this item was 13%. Participants assigned to the descriptive norm control condition should have indicated that this information was not provided in the article.

Appendix Q: Demographic, Quality of Response, and Suspicion Questionnaire – MTurk Sample

Please answer the following questions.

1. Type your age (e.g., 21).

2. What is your gender?
    *   Woman
    *   Man
    *   Trans woman
    *   Trans man
    *   Non-binary/Third gender
    *   Prefer to self-describe
    *   Prefer not to say

3. Pick the category below that best describes your ethnic background.
    *   Non-Hispanic White, European American
    *   Black, Afro-Caribbean, African American
    *   East Asian, Pacific Islander, Asian American
    *   Latina, Latino, Hispanic American
    *   South Asian, Central Asian, Indian American
    *   Middle Eastern, Arab American
    *   Alaskan Native, Native American
    *   Biracial, Multiracial
    *   Other

4. What is your sexual orientation?
    *   Lesbian or gay
    *   Straight, that is, not lesbian or gay
    *   Bisexual
    *   Something else
    *   I don't know the answer

5. Is English your native language?
    *   Yes
    *   No

6. How well do you speak English?
    *   Very well
    *   Well
    *   Not well
    *   Not at all

7. What is the highest degree or level of school that you have completed?

- Less than high school diploma
- High school diploma or GED
- Some college, but no degree
- Associate degree (e.g., AA, AS)
- Bachelor's degree (e.g., BA, BBA, BS)
- Master's degree (e.g., MA, MS, MEng)
- Professional degree (e.g., MD, DDS, JD)
- Doctorate (e.g., PhD, EdD)

8. What is your current employment status? Please select all that apply.
   - Full time employment
   - Part time employment
   - Unemployed/Looking for work
   - Unemployed/Not looking for work
   - Student
   - Other (please specify)

9. What is your current occupation?

10. What is your intended occupation?

11. What is the highest degree or level of school completed by your mother?
    - Less than high school diploma
    - High school diploma or GED
    - Some college, but no degree
    - Associate degree (e.g., AA, AS)
    - Bachelor's degree (e.g., BA, BBA, BS)
    - Master's degree (e.g., MA, MS, MEng)
    - Professional degree (e.g., MD, DDS, JD)
    - Doctorate (e.g., PhD, EdD)
    - N/A

12. What is your mother's current employment status? Please select all that apply.
    - Full time employment
    - Part time employment
    - Unemployed/Looking for work
    - Unemployed/Not looking for work
    - Student
    - Retired
    - Other (please specify)
    - N/A
    - I'm not sure

13. What is your mother's current occupation?

- I'm not sure

14. What is your mother's intended occupation?
   - I'm not sure

15. What was your mother's occupation before her retirement?
   - I'm not sure

16. What is the highest degree or level of school completed by your father?
   - Less than high school diploma
   - High school diploma or GED
   - Some college, but no degree
   - Associate degree (e.g., AA, AS)
   - Bachelor's degree (e.g., BA, BBA, BS)
   - Master's degree (e.g., MA, MS, MEng)
   - Professional degree (e.g., MD, DDS, JD)
   - Doctorate (e.g., PhD, EdD)
   - N/A

17. What is your father's current employment status? Please select all that apply.
   - Full time employment
   - Part time employment
   - Unemployed/Looking for work
   - Unemployed/Not looking for work
   - Student
   - Retired
   - Other (please specify)
   - N/A
   - I'm not sure

18. What is your father's current occupation?
   - I'm not sure

19. What is your father's intended occupation?
   - I'm not sure

20. What was your father's occupation before his retirement?
   - I'm not sure

21. In which type of environment have you spent most of your life?
   - Rural (a settled place outside a town or city with a sparse population, often fewer than 10,000 inhabitants)
   - Suburban (a residential area on the outskirts of a city often populated by 10,000 to 50,000 inhabitants)
   - Urban (a city with high population density, generally 50,000 or more people)

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22. Please choose the option below that best captures the economic status in which you have lived for the majority of your life.
- Lower class
- Lower middle class
- Middle class
- Upper middle class
- Upper class

23. Are you currently the head of your household (i.e., living independently of your parents or guardians, supporting yourself entirely, and/or supporting a family or other dependents)?
- Yes
- No

24. What is your current total household income?
- Less than $10,000
- $10,000 to $14,999
- $15,000 to $24,999
- $25,000 to $49,999
- $50,000 to $99,999
- $100,000 to $149,999
- $150,000 to $199,999
- $200,000 or more

25. When it comes to politics in general I am...

Very liberal	Liberal	Somewhat liberal	Middle of the road	Somewhat conservative	Conservative	Very conservative

26. When it comes to social issues I am...

Very liberal	Liberal	Somewhat liberal	Middle of the road	Somewhat conservative	Conservative	Very conservative

27. When it comes to economic issues I am...

Very liberal	Liberal	Somewhat liberal	Middle of the road	Somewhat conservative	Conservative	Very conservative

Please honestly answer the following questions about how you responded to the survey.

1. What kind of device did you take this survey on?
- Laptop or desktop computer
- Tablet
- Mobile device or cell phone

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- Other (please specify)

2. How carefully did you read the items and instructions in this survey?

    1   2   3   4   5   6   7

Not at all   Very

carefully   carefully

3. How much thought did you put into your responses for the tasks and questions?

    1   2   3   4   5   6   7

Very little   A lot of

thought   thought

4. To what extent did you rush through the study in order to complete it as quickly as possible?

    1   2   3   4   5   6   7

Rushed a   Took my

lot   time

5. While you completed the study, which of the following were you doing? Please select all that apply.
   - Watching television
   - Texting
   - Looking at Facebook or another social networking site
   - Listening to music
   - Surfing the internet
   - Reading
   - Working on another online study
   - Having a conversation with someone
   - Talking on the phone
   - Nothing, I only completed the survey

Please answer the following questions.

1. When people participate in psychology studies, they sometimes become suspicious if they feel that the research has a hidden purpose. Did you experience any feelings of suspicion about anything that you encountered during the survey?

2. If you did feel any suspicion throughout the survey, do you think it affected any of your responses?

3. Were there any parts of the survey that you found confusing or ambiguous?

Appendix R: Demographic, Quality of Response, and Suspicion Questionnaire – Sona Sample

Please answer the following questions.

28. Type your age (e.g., 21).

29. What is your gender?
- Woman
- Man
- Trans woman
- Trans man
- Non-binary/Third gender
- Prefer to self-describe
- Prefer not to say

30. Please choose the category below that best describes your racial/ethnic background.
- Non-Hispanic White, European American
- Black, Afro-Caribbean, African American
- East Asian, Pacific Islander, Asian American
- Latina, Latino, Hispanic American
- South Asian, Central Asian, Indian American
- Middle Eastern, Arab American
- Alaskan Native, Native American
- Biracial, Multiracial
- Other

31. What is your sexual orientation?
- Lesbian or gay
- Straight, that is, not lesbian or gay
- Bisexual
- Something else
- I don't know the answer

32. Is English your native language?
- Yes
- No

33. How well do you speak English?
- Very well
- Well
- Not well
- Not at all

34. For how many years have you attended college?

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- One
- Two
- Three
- Four
- Five
- Six or more

35. Which of the following best describes your major?

36. What is your current employment status? Please select all that apply.
- Full time employment
- Part time employment
- Unemployed/Looking for work
- Unemployed/Not looking for work
- Other (please specify)

37. What is your current occupation?

38. What is your intended occupation?

39. What is the highest degree or level of school completed by your mother?
- Less than high school diploma
- High school diploma or GED
- Some college, but no degree
- Associate degree (e.g., AA, AS)
- Bachelor's degree (e.g., BA, BBA, BS)
- Master's degree (e.g., MA, MS, MEng)
- Professional degree (e.g., MD, DDS, JD)
- Doctorate (e.g., PhD, EdD)
- N/A

40. What is your mother's current employment status? Please select all that apply.
- Full time employment
- Part time employment
- Unemployed/Looking for work
- Unemployed/Not looking for work
- Student
- Retired
- Other (please specify)
- N/A
- I'm not sure

41. What is your mother's current occupation?
- I'm not sure

42. What is your mother's intended occupation?
- I'm not sure

43. What was your mother's occupation before her retirement?
- I'm not sure

44. What is the highest degree or level of school completed by your father?
- Less than high school diploma
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- Some college, but no degree
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- Master's degree (e.g., MA, MS, MEng)
- Professional degree (e.g., MD, DDS, JD)
- Doctorate (e.g., PhD, EdD)
- N/A

45. What is your father's current employment status? Please select all that apply.
- Full time employment
- Part time employment
- Unemployed/Looking for work
- Unemployed/Not looking for work
- Student
- Retired
- Other (please specify)
- N/A
- I'm not sure

46. What is your father's current occupation?
- I'm not sure

47. What is your father's intended occupation?
- I'm not sure

48. What was your father's occupation before his retirement?
- I'm not sure

49. In which type of environment have you spent most of your life?
- Rural (a settled place outside a town or city with a sparse population, often fewer than 10,000 inhabitants)
- Suburban (a residential area on the outskirts of a city often populated by 10,000 to 50,000 inhabitants)
- Urban (a city with high population density, generally 50,000 or more people)

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50. Please choose the option below that best captures the economic status in which you have lived for the majority of your life.
- Lower class
- Lower middle class
- Middle class
- Upper middle class
- Upper class

51. Are you currently the head of your household (i.e., living independently of your parents or guardians, supporting yourself entirely, and/or supporting a family or other dependents)?
- Yes
- No

52. What is your current total household income?
- Less than $10,000
- $10,000 to $14,999
- $15,000 to $24,999
- $25,000 to $49,999
- $50,000 to $99,999
- $100,000 to $149,999
- $150,000 to $199,999
- $200,000 or more

53. When it comes to politics in general I am...

Very liberal	Liberal	Somewhat liberal	Middle of the road	Somewhat conservative	Conservative	Very conservative

54. When it comes to social issues I am...

Very liberal	Liberal	Somewhat liberal	Middle of the road	Somewhat conservative	Conservative	Very conservative

55. When it comes to economic issues I am...

Very liberal	Liberal	Somewhat liberal	Middle of the road	Somewhat conservative	Conservative	Very conservative

Please honestly answer the following questions about how you responded to the survey.

6. What kind of device did you take this survey on?
- Laptop or desktop computer
- Tablet
- Mobile device or cell phone
- Other (please specify)

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7. How carefully did you read the items and instructions in this survey?

    1   2   3   4   5   6   7

    Not at all   Very

    carefully   carefully

8. How much thought did you put into your responses for the tasks and questions?

    1   2   3   4   5   6   7

    Very little   A lot of

    thought   thought

9. To what extent did you rush through the study in order to complete it as quickly as possible?

    1   2   3   4   5   6   7

    Rushed a   Took my

    lot   time

10. While you completed the study, which of the following were you doing? Please select all that apply.
    - Watching television
    - Texting
    - Looking at Facebook or another social networking site
    - Listening to music
    - Surfing the internet
    - Reading
    - Working on another online study
    - Having a conversation with someone
    - Talking on the phone
    - Nothing, I only completed the survey

Please answer the following questions.

4. When people participate in psychology studies, they sometimes become suspicious if they feel that the research has a hidden purpose. Did you experience any feelings of suspicion about anything that you encountered during the survey?

5. If you did feel any suspicion throughout the survey, do you think it affected any of your responses?

6. Were there any parts of the survey that you found confusing or ambiguous?

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Appendix S: Bivariate Correlations Among All Variables

Table A2. *Bivariate correlations among all variables*.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
Primary Variables																								
1. Endorsement of Traditional Male Role Norms																								
2. Communal Goal Endorsement	-.23**																							
3. Interest in Nursing	.01	.24**																						
4. Impressions of Nursing	-.24**	.34**	.29**																					
5. Perceived Masculinity of Nursing	-.13*	.18**	.33**	.27**																				
6. Female-Dominated Career Interest	-.01	.18**	.41**	-.01	.21**																			
Covariables																								
7. Nursing Salary Estimation	.01	.05	.01	.09	-.05	-.03																		
8. Percent of Male Nurses Estimation	-.12*	.12*	-.02	.18**	.17**	.02	-.09																	
9. Age	.05	.02	.06	.14**	.10	-.01	-.08	-.08																
10. Race/Ethnicity	-.07	.11*	.09	.05	.07	.07	-.01	.10	-.12*															
11. Sexual Orientation	-.29**	.13*	.06	.08	.10	.09	-.14*	.04	-.06	.02														
12. Education	.01	.02	.01	.10	.03	.03	.11*	-.08	.41**	-.14*	-.07													
13. Employment Status	-.14*	-.02	-.06	-.13*	-.04	.01	.00	.02	-.30**	.06	.10	-.20**												
14. Student Status	.09	-.06	.06	.02	-.01	-.03	-.11*	-.05	.49**	-.18**	-.06	.25**	-.54**											
15. Mother Is/Was Nurse	-.06	.08	.05	.03	.04	.04	.02	.05	.00	.02	.00	.00	.03	-.02										
16. Father Is/Was Nurse	-.06	.08	-.02	.04	.08	.03	.09	.00	-.06	.04	-.16**	.08	.03	-.04	-.01									
17. Head of Household Status	-.15**	.03	-.02	.03	.02	.00	.08	.10	-.46**	.18**	.13*	-.24**	.37**	-.45**	.03	.06								
18. Current Household Income	.03	-.09	-.03	.02	.10	-.01	.09	-.08	.26**	-.13	-.06	.12	-.41**	.41**	-.01	.00	.c							
19. Political Orientation	.46**	-.10	-.06	-.16**	-.04	-.11*	.07	-.05	.02	-.18**	-.22**	-.01	-.01	.00	.00	-.02	-.14*	.16*						
20. Socioeconomic Status	-.10	.09	-.06	-.06	.01	.01	.13*	-.03	-.13*	-.16**	-.05	.13*	.09	-.19**	.04	.06	.18**	-.01	-.04					
Exploratory Variables																								
21. Agentic Goal Endorsement	.33**	.14*	.05	.04	-.05	-.07	.14**	.04	-.10	.03	-.08	.03	-.09	-.03	-.06	-.01	-.01	.06	.27**	.01				
22. Male-Dominated Career Interest	.10	-.17**	-.12*	-.17**	-.08	-.15**	.02	-.06	.07	-.13*	-.01	-.08	.01	.13*	.00	-.08	-.12*	.21**	.09	-.05	.07			
23. Gender Balanced Career Interest	.08	.04	.08	-.12*	-.01	.30**	.03	-.07	.11*	-.09	.05	.12*	-.11*	.15**	.07	.02	-.14*	.12	-.07	.04	.11*	.44**		
24. Future Family vs. Career Orientation	-.12*	-.21**	-.06	-.04	-.07	-.08	-.02	-.09	-.06	.04	.16**	.02	.02	.05	-.08	-.01	.03	.04	-.12*	-.04	.11*	.10	.03	

Note. Race/Ethnicity is coded as 0 for White and 1 for Nonwhite. Sexual Orientation is coded as 0 for Straight, 1 for Bisexual, and 2 for Gay. Education is coded 1 for Less than high school diploma, 2 for High school diploma or GED, 3 for Some college, but no degree, 4 for Associate's degree, 5 for Bachelor's degree, 6 for Master's degree, 7 for Professional degree, and 8 for Doctorate. Employment Status is coded 0 for Employed and 1 for Not employed. Student Status is coded 0 for Student and 1 for Nonstudent. Mother Is/Was Nurse was coded 0 for Yes and 1 for No. Father Is/Was Nurse was coded 0 for Yes and 1 for No. Head of Household Status was coded 0 for Yes and 1 for No. Higher Political Orientation values indicate more conservatism. Lower Future Family vs. Career Orientation values denote a stronger family orientation, whereas higher values indicate a stronger career orientation. * $p < .05$. ** $p < .01$.

Appendix T: IRB Approval Letter

USF
UNIVERSITY OF SOUTH FLORIDA

February 19, 2018

Joanna Lawler
Psychology
Tampa, FL 33612

RE: **Expedited Approval for Initial Review**

IRB#: Pro00034135

Title: Using Social Norms to Increase Men's Interest in Stereotypically Feminine Careers

Study Approval Period: 2/19/2018 to 2/19/2019

Dear Ms. Lawler:

On 2/19/2018, the Institutional Review Board (IRB) reviewed and **APPROVED** the above application and all documents contained within, including those outlined below.

Approved Item(s):

Protocol Document(s):

Study Protocol Version .01, 02.16.18.docx

Consent/Assent Document(s)*:

MTurk Informed Consent Version .01,
02.02.18.docx Sona Informed Consent Version .01,
02.02.18.docx

*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent documents are valid until the consent document is amended and approved. Online consent forms are not stamped forms.

It was the determination of the IRB that your study qualified for expedited review which includes activities that (1) present no more than minimal risk to human subjects, and (2)

involve only procedures listed in one or more of the categories outlined below. The IRB may review research through the expedited review procedure authorized by 45CFR46.110. The research proposed in this study is categorized under the following expedited review category:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your study qualifies for a waiver of the requirements for the documentation of informed consent as outlined in the federal regulations at 45CFR46.117(c) which states that an IRB may waive the requirement for the investigator to obtain a signed consent form for some or all subjects if it finds either: (1) That the only record linking the subject and the research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern; or (2) That the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context. (Online Consents)

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval via an amendment. Additionally, all unanticipated problems must be reported to the USF IRB within five (5) calendar days.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

Kristen Salomon, Ph.D., Vice Chairperson
USF Institutional Review Board

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