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***Drawing Doctors vs. Nurses:  
Gendered Perceptions of Health Professionals***\*

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**ABSTRACT**

Although women and men are employed at similar rates, there remains a high level of occupational sex segregation. Existing gender stereotypes influence occupational choice because of gendered perceptions of occupations. In this study, college students ( $n = 48$ ) were asked to draw a picture of an individual in a gender-typed health profession—either a doctor or a nurse—using a variation of the Draw-a-Scientist paradigm. Using quantitative and qualitative techniques, we find that doctors are drawn as women nearly as often as men, while nurses are drawn as women far more frequently than they are as men. Doctors are far more likely to be illustrated wearing white coats and stethoscopes, while nurses are shown wearing scrubs and using other medical paraphernalia

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in addition to stethoscopes. Finally, nurses are far more likely to be shown with their patients and to be described as helping others. Our findings provide key details related to presentational expectations for doctors and nurses, which in turn have important implications for occupational sex segregation. In other words, our data demonstrate which types of impression management (particularly attire, objects, and setting) individuals consider to be crucial signifiers for nurses and doctors, which may also influence their occupational choices.

**KEY WORDS** Gender; Gender Stereotypes; Occupations; Draw-a-Scientist Test

Women and men are employed at similar rates outside the home (46.9 percent of employed individuals are women) (U.S. Bureau of Labor Statistics 2015), yet there continues to be a high level of occupational sex segregation (Guy and Newman 2004), particularly within the health professions (Newman 2014). Indeed, though more and more women are entering medical school (Ku 2011), men are still more likely than women to be physicians or surgeons (63.7 percent men) while women continue to be much more likely than men to become nurses (90 percent women) (Bureau of Labor Statistics 2015). Occupational sex segregation also contributes to the existing gender wage gap: The median salary for a doctor is \$186,850 while nurses' average salary is \$66,220 (Bureau of Labor Statistics 2015). Additionally, gendered segregation exists even *within* these occupations: female physicians are more likely to specialize in obstetrics/gynecology, family practice, and pediatrics and are less likely to specialize in surgery and the E-ROAD (emergency, radiology, ophthalmology, anesthesiology, and dermatology) specialties (Ku 2011). Similarly, male nurses often pursue psychiatry, critical and emergency care, and administration, while female nurses are more likely to engage in pediatrics, maternal/newborn, or community nursing (Trudeau 1996). Thus, when women do become doctors and when men do become nurses, they tend to go into specific, gendered, specialties. Notably, the specialties that men tend to go into are associated with greater prestige and income than are the specialties that women go into, which further contributes to the gender wage gap (Lo Sasso et al. 2011; Norredam and Album 2007).<sup>1</sup> In this study, we investigate the existence of gender stereotypes of health care workers, specifically doctors and nurses. We asked, "How do gender expectations influence how students view doctors and nurses?" To do so, we used a variation of the Draw-a-Scientist Test (DAST) paradigm. The DAST paradigm has traditionally been used to tap young children's nonverbal gender stereotypes of scientists (Chambers 1983). While the paradigm has been used with elementary students through college-age students (Barman 1996; Cheryan et al. 2013; Rahm and Charbonneau 1997) and for occupations other than scientists (Cheryan et al. 2013; Losh, Wilkie and Pop 2008), our study is the first to use the DAST to investigate the gender stereotypes of doctors and nurses.

## **GENDER AND OCCUPATIONS**

There are a variety of explanations for occupational sex segregation, including gendered college major choice, work-family–balance concerns, gender socialization, and gendered vocational interests (see Stockdale and Nadler 2013 for a review of these across several social science disciplines). In this article, however, we focus on how notions of gender influence perceptions of doctors and nurses, which may, in turn, influence occupational choice (Correll 2001; Ridgeway and Correll 2004; Valian 1998). We explore how Western understandings of gender, specifically our notions of femininity and masculinity, infuse our notions about the characteristics necessary to be in particular health professions with the understanding that cultural conceptions of femininity and masculinity are built into the organization of work (Acker 1990). In this culture, doctors are seen as masculine and nurses as feminine (Davies 2003; Pringle 1998). Given that men are expected to behave masculinely (i.e., agentially) and women are expected to behave femininely (i.e., communally) and that the behaviors of men and women are judged against existing gender stereotypes, men and women are constrained by our notions of gender. When women and men behave in ways contrary to gender stereotypes, they experience a variety of negative consequences (see Rudman and Glick 2008 for a detailed review of the literature on this topic). Furthermore, stereotypes and expectations for men are more constrained. These stereotypes begin young: In a study of children, Wilbourn and Kee (2010) found that children failed to remember modified gender nontraditional occupational pairs involving men (like male nurses) more often than those involving women (like female doctors). Thus, existing gender stereotypes end up reinforcing the existing gendered division of labor (Cejka and Eagly 1999). Likewise, heterosexism may lead heterosexual men to anticipate a lack of fit in feminine-identified careers such as nursing (Allen and Smith 2011). In other words, perceptions of gender influence the choices that individuals make when trying to decide which field of study to pursue (Ridgeway 2011; Ridgeway and Correll 2004; Rudman and Glick 2008).

Gender further affects how female and male doctors and nurses interact with patients, as well as how they are judged and evaluated. For example, patients feel less anxious around, more comfortable with, and less annoyed by female doctors (Hall and Roter 2002). Additionally, female physicians' communication style is seen as more democratic, warm, attentive, and patient-centered (Roter, Hall, and Aoki 2002; van den Brink-Muinen, Bensing, and Kerssens 1998; Zaharias, Piterman, and Liddell 2004). Male and female physicians have been found to use different styles when providing patients with instructions, with female physicians' preferred style eliciting more compliant responses (West 1990). In contrast, female physicians are evaluated negatively when they express uncertainty, particularly when the patient is a man (Cousin, Schmid Mast and Jaunin-Stalder 2013). Male nurses face a lack of support, possible ridicule, and devaluation of their career choice (Evans and Frank 2003). Male nurses also worry that their female patients will accuse them of being sexually inappropriate or view their care as sexually inappropriate (Evans 2002; O'Lynn 2004).

## **DRAW-A-SCIENTIST**

To tap into existing gender stereotypes about nurses and doctors, we use an adaptation of the DAST paradigm, which originally emerged as a way to determine, nonverbally, the gender stereotypes held by young children (Chambers 1983; Finson 2002). The paradigm has previously been extended to samples of elementary (Barman 1996), high school (Rahm and Charbonneau 1997), and college students (Cheryan et al. 2013), as well as to a small number of occupations with less of a direct scientific focus (e.g., computer users, teachers, and veterinarians) (Losh, Wilke and Pop 2008; Mercier, Barron and O'Connor 2006). Nonetheless, the majority have focused on stereotypes and images of scientists. In contrast, this study expands the DAST paradigm to explore scientific occupations more broadly by focusing specifically on college students' views of two types of health professionals: nurses and doctors. We have chosen to investigate stereotypes or schemas about nurses and doctors because both occupations are gendered in two ways: (1) their association with a particular gender (i.e., doctors with men and nurses with women) and (2) the disproportion of men or women in each occupation. We also concentrate on the stereotypes held by college students because their cultural ideas about these occupations shape the choices they will make about their occupational paths, which in turn influences gendered occupational segregation.

## **METHODS**

Participants for this study were undergraduate students enrolled in introductory sociology or psychology classes at a teaching-intensive regional university in the Midwest. Students were randomly assigned to one of several conditions in which they were asked to draw a picture of an individual in one of a variety of gender-typed occupations; for this analysis, we have focused on students' drawings of doctors and nurses.<sup>2</sup> Students were provided with the following prompt (modified from Farland-Smith 2012; emphasis added):

Imagine that tomorrow you are going on a trip to visit a [doctor/nurse] where they work. First, **draw** the [doctor/nurse] busy working. Second, **label** your drawing. Third, add a **caption** that describes what this [doctor/nurse] might be saying to you about the work you are watching them do. Do not draw yourself.

Finally, students were provided with a survey that asked a number of demographic questions, including their sex, age, racial/ethnic identity, religious affiliation, sexual/gender orientation, marital status, parental occupations, career aspirations, school year, and college major.

In total, 48 students completed drawings, 25 of doctors and 23 of nurses. Seventy (70) percent of students were female, which roughly reflected the gender breakdown of the two courses from which the participant pool was drawn. The majority of participants were white (86 percent), 12 percent were Hispanic, and 2 percent were

“Other.” While the majority of students were of traditional college age (i.e., under 22), 12 percent of the sample were 24 and older. Finally, the largest number of participants (40 percent) were in the first year of college.

The two principal investigators (Hirshfield and Rogalin) and two research assistants (Stephens and Spevak) developed a coding schema to analyze the pictures using both quantitative and qualitative techniques (Babbie 2009). Specifically, we coded each group of drawings by gender, race, hairstyle, attire, accessories/props, and several other interpersonal variables (such as whether workers were drawn alone or with others), counting each occurrence (quantitative). Next, for many of these codes, we also noted *why* we coded these pictures in the ways we did. For example, if a worker was coded as a woman, we noted that we coded it that way because of pronoun use, hair length, or attire and examined patterns in these details (qualitative). Inter-rater reliability was quite high for the majority of our codes, falling between 92 and 96 percent; however, there was slightly lower agreement (72 percent) between coders regarding gender. This was due to a combination of coders’ variable conservatism and the challenges related to identifying gender from somewhat crude drawings.<sup>3</sup> The two primary investigators met to discuss the disagreements and mutually agreed upon the final coding. Finally, we performed a thematic (qualitative) analysis of the captions included in each picture.

## RESULTS

Our results demonstrate several clear patterns in the ways that college students view doctors and nurses, many of which evoke gendered stereotypes or gendered understandings of work.

### *Gender of Worker*

Participants were more likely to unambiguously draw doctors as men (40 percent) than women (28 percent),<sup>4</sup> whereas they drew nurses as women a majority of the time (74 percent vs. 4 percent) (see Table 1). Nurses were rarely drawn as men; indeed, the sole nurse clearly drawn as a man was drawn by a male student, though several ( $n = 4$ ) other male students drew female nurses. This is consistent with the existing DAST literature, demonstrating that although participants are more likely to draw male scientists, when female scientists are drawn, they are drawn by female participants (Chambers 1983). Interestingly, students’ genders appeared to have no bearing on the gender of doctor that they drew; in fact, men and women students were roughly equally likely to draw men, women, or ambiguously gendered doctors. An additional notable difference between the drawings was in how obviously gendered they were – nurses were more likely than doctors to be drawn with obvious gender markers such as long eyelashes, long styled hair, and red lips (Figure 1), while doctors, even those whom researchers identified as women, were drawn in less stereotypically feminine ways.

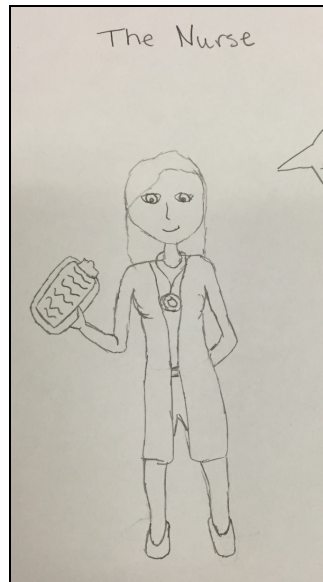
**Table 1. Total Counts (and Percentages) of Coded Variables**

		<b>Doctor (n = 25)</b>		<b>Nurse (n = 23)</b>	
		<i>N</i>	%	<i>N</i>	%
<b>Gender</b>					
	Women	7	28	17	74
	Men	10	40	1	4
	Unclear	8	32	5	22
	Wearing Makeup	1	4	3	13
<b>Hair Color</b>					
	Blonde	1	4	6	26
	Dark	10	40	10	43
	Gray	2	8	0	0
	Other	2	8	0	0
	Unclear	8	32	3	4
	No Hair Drawn	8	32	4	17
<b>Attire &amp; Accessories<sup>a</sup></b>					
	Glasses	3	12	0	0
	Lab Coat	8	32	1	4
	Nurse's Cap			4	17
	Scrubs	6	24	13	57
<b>Medical Paraphernalia<sup>a</sup></b>					
	Chart	4	16	2	9
	Syringe	0	0	3	13
	Stethoscope	16	64	7	30
	Other Medical <sup>b</sup>	9	36	12	52
<b>Setting</b>					
	Exam Tables	14	56	2	9
	Bed	3	12	9	39
	By Self	12	48	3	13
	With Patients	13	52	20	87

Notes: <sup>a</sup> It was possible for a drawing to be coded with multiple attire and medical items; thus, the percentages may not add up to 100 percent.

<sup>b</sup> “Other medical” refers to paraphernalia other than chart, syringe, or stethoscope (i.e., x-rays, blood pressure cuff).

**Figure 1. A Stereotypically Feminine Nurse**



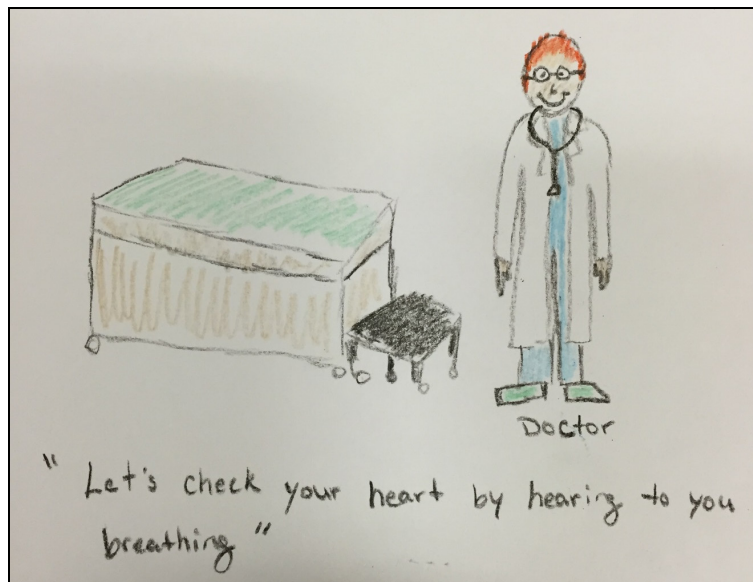
Notably, nurses were also more likely to be drawn as blonde than were doctors (26 percent vs. 4 percent), which is of particular significance, given wide-spread stereotypes about “dumb blondes” (Bry, Follenfant, and Meyer 2008). Doctors were also more likely to be drawn without hair than were nurses (32 percent vs. 17 percent). Finally, fewer nurses than doctors were drawn so that their genders were unclear to researchers (ambiguous nurses = 5; ambiguous doctors = 8).

#### *Attire and Accessories*

Nurses were more likely to be drawn wearing scrubs than were doctors (60 percent vs. 24 percent), and doctors were much more likely than nurses to be shown wearing white coats (32 percent vs. 4 percent) (Figure 2). These results support past studies that reported patients’ preference for physicians’ choice of wearing a white coat (Gherardi et al. 2009; Rehman et al. 2005). Further, in one case, a nurse was drawn wearing decorative print scrubs, which are rarely worn by physicians (with the exception, perhaps, of pediatricians). Given cultural associations between white coats, authority, and science (Boutin-Foster, Foster, and Konopasek 2008), these findings are particularly important.



**Figure 2. A Doctor in a White Coat, Wearing a Stethoscope**



Doctors were drawn with a stethoscope more than half of the time, with only about a third of nurses shown with one (64 percent vs. 30 percent). In comparison, nurses were drawn with a larger variety of other medical tools, such as syringes, blood pressure cuffs, and x-rays (52 percent vs. doctors 36 percent). Doctors were more likely (12 percent vs. 0 percent) to be portrayed wearing glasses, which is notable given the link between stereotypes about intelligence and glasses (Leder, Forster, and Gerger 2011).

### *Setting*

Students often drew quite elaborate settings for their nurses and doctors, often more elaborate than the pictures of the workers themselves. Drawings of doctors included exam tables (see Figure 3) more often than did drawings of nurses (56 percent vs. 9 percent), while drawings of nurses were more likely to include depictions of beds (12 percent vs. 39 percent; see Figure 4). We theorize that this is due to students' view of doctors in outpatient settings (i.e. in clinics), while nurses were more likely to be imagined in in-patient or hospital roles.

**Figure 3. A Doctor Treating a Patient Sitting on an Exam Table**



**Figure 4. A Nurse Checking on Her Patient, Who Is Lying in a Bed (Hooked to an IV)**



Other medical equipment drawn in pictures of both nurses and doctors included sinks, stools, IV bags, and x-ray machines. While the majority of doctors and most nurses were drawn in office or hospital settings, some of both were also drawn in more emergent or surgical settings. Notably, while doctors were drawn alone just as

frequently as they were drawn with their patients (48 percent vs. 52 percent), nurses were overwhelmingly drawn (87 percent) with their patients. This may demonstrate students' views of nursing as a service, helping, or carework profession. Indeed, this view was supported by students' higher likelihood of using terms like "this might hurt" and "I help people" in their captions for their drawings of nurses.

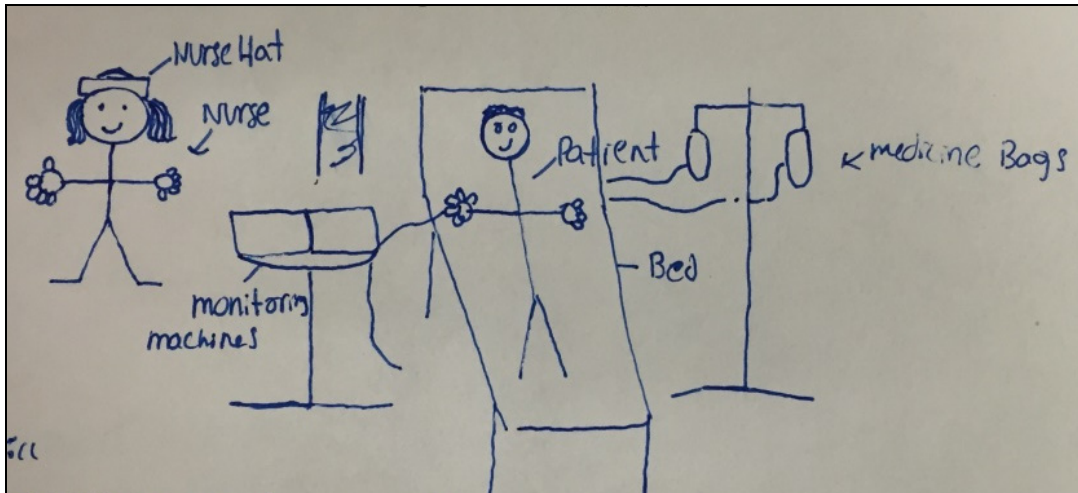
## **DISCUSSION**

On the whole, our results demonstrate that gendered expectations about the roles of doctors and nurses are reflected in the illustrations of college students in several key ways. First, doctors are more commonly drawn as men than women, while nurses are more commonly drawn as women. Second, doctors are more commonly drawn wearing white coats, while nurses are more frequently drawn in scrubs; given the symbolic link of white coats to status or intelligence, this has interesting gendered implications. Finally, doctors are more likely to be shown alone, whereas nurses are shown with patients; this demonstrates a clear link between nursing and carework, a feminized work role.

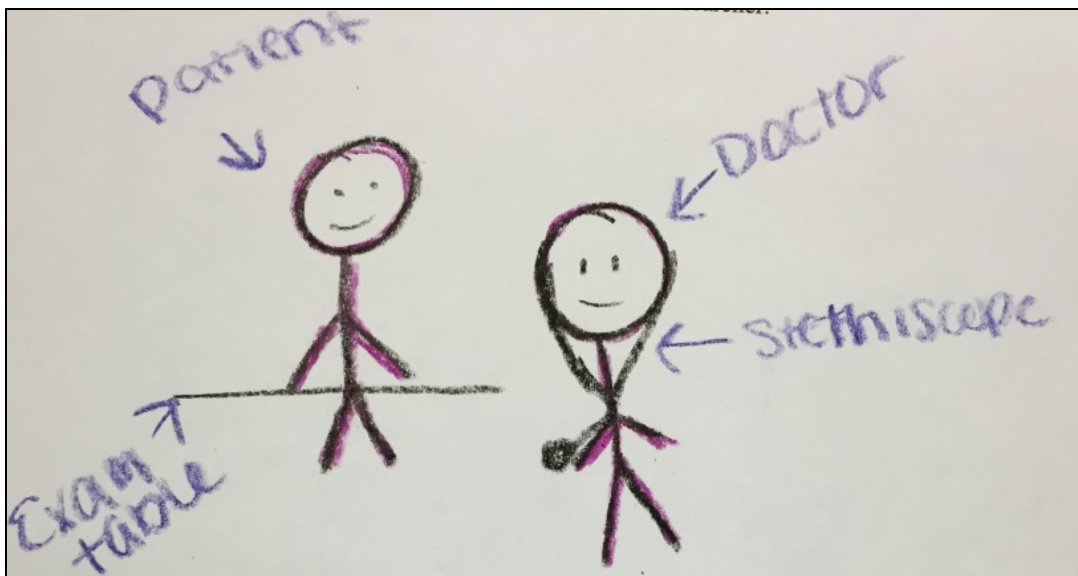
This study has important implications for our understanding of gendered occupational expectations and may provide insight into some of the sources of occupational sex segregation. Our findings also provide key details related to presentational expectations about each occupation. Specifically, we find that while stereotypes about doctors appear to have become less gendered, such that college students are nearly as likely to draw women doctors as men doctors, students still overwhelmingly draw nurses as women. Attire is linked with occupation, as well, so doctors are usually imagined wearing white coats, while nurses are more likely viewed in scrubs. Stethoscopes appear to hold more symbolic importance for physicians, while nurses are portrayed and viewed using a broader array of medical paraphernalia. Finally, although both doctors and nurses are medical service providers, nurses are much more likely to be viewed as helping professionals: They were more frequently drawn with their patients and were described with "helping" captions.

There are several limitations to our study. Because the occupations of doctor and nurse are quite gendered, we chose to begin our study with these fairly clear examples, yet there is obvious ambiguity about the gendered nature of additional health occupations, such as physician's assistants, occupational therapists, veterinarians, and pharmacists. We plan to examine images and stereotypes about these occupations in a future study. Students' drawings also varied in their complexity and clarity, which led to some challenges for coding. Although the more complex drawings were easily coded in terms of gender, setting, and the like, some of the cruder drawings posed greater challenges. In contrast, some of the crudest stick figures highlighted what characteristics or symbols were key in identifying a doctor versus a nurse, or a man versus a woman (see Figures 5 and 6). Finally, students' captions varied dramatically—there was obviously some confusion about whether we had expected them to describe what was happening in the picture or to provide dialogue between the characters drawn in the illustration. For future studies, we have changed the prompt to clarify this issue.

**Figure 5. A Crudely Drawn Nurse, Demonstrating Both the Importance of Hair in Symbolizing Gender and the Nurse's Hat in Identifying a Nurse**



**Figure 6. A Stick-Figure Doctor, with the Key Symbol of a Stethoscope to Demonstrate the Doctor's Role**



Despite these limitations, these findings have some important substantive and methodological implications. First, our results suggest that despite major demographic shifts in the fields of medicine and nursing, gendered stereotypes and images about these professions may still lag behind. These stereotypes and images may, in turn, have important consequences for successful recruitment into or respect for these professions. This study also provides a key example of a possible method through which college students' stereotypes and views may easily be tapped. While this study focused

primarily on professions (as the DAST, on which this study was based did), this method could also be extended to tap into unconscious stereotypes of a variety of other social roles. Given the importance of unconscious stereotypes and biases in determining students' career paths (Ware and Lee 1988), these sorts of research studies are essential.

## ENDNOTES

1. As LoSasso et al. (2011) note, however, women also make less on average in *all* medical specialties, an additional component of gendered inequality within the health professions.
2. The data presented here are part of a larger study that also includes professors, teachers, scientists, leaders, and janitors. See Hirshfield and Rogalin (2015) for more detail about the larger study and the methods associated with this project.
3. These challenges are discussed further in Hirshfield and (Rogalin 2015).
4. These percentages were calculated using only the unambiguously drawn pictures. See the percentages in Table 1 for the breakdown that includes the pictures drawn ambiguously.

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