Canyon or Crevasse? The Gender Pay Gap in Nursing

Stanley Carlton Wilkins

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Canyon or Crevasse? The Gender Pay Gap in Nursing

By

Stanley C. Wilkins III

A Thesis

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

Major: Sociology

The University of Memphis

May 2022
DEDICATION

This work is dedicated to my wife, Elo, who has been a never-ending source of support though my entire college experience. Whether it was keeping the fur-kids busy, doing extra things around the house while I studied, or pulling me out of schoolwork to clear my head, you have been a constant source of positivity. Thank you for pushing me to go back to school in the first place, and for seeing things in me that I don’t see in myself. This is the culmination of so much of your work as it is mine. I love you always.
ACKNOWLEDGEMENTS

First of all, I would like to thank my chair, Dr. Junmin Wang, for an endless supply of both patience and guidance throughout this process. I could not have brought this project across the finish line without her help, and I can’t express how grateful I am to you for all of her help and support. I would also like to thank Dr. Wes James and Dr. Jeni Loftus for their work on my thesis committee. I wish I could have taken classes with them, but their work on my thesis committee taught me so much. I would also like to thank Dr. Joseph Lariscy. I was one of your his “mathphobic” students and, through no small amount of effort and patience, he still managed to teach me how to make the numbers make sense. Lastly, I would like to thank Ms. Kendra Murphy. She took a would-be Anthropology student and introduced me to Sociology. She was instrumental in setting me on this path and in doing so brought me into contact with all the amazing people in the Sociology department at the University of Memphis.
ABSTRACT

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Despite good progress toward gender equality in recent decades, women continue to lag significantly behind men in wages and compensation at workplaces. This study examines the gender pay gap in the nursing profession – one traditionally female dominated field. By analyzing the 2019 American Community Survey (ACS) data, I conduct cross-tabulation and multivariate linear regression analyses to test two core hypotheses: (1) men are more likely to work in the nursing fields with higher pay; and (2) male nurses tend to have higher wages than female nurses. I find that female nurses predominate in the fields with lower pay, such as registered nursing, practical and vocational nursing, and nursing assistants. Women’s numerical dominance declines among nursing anesthetists who receive relatively higher wages. Moreover, the regression models, where age and race are controlled, show a significant pay gap. This study offers solid empirical evidence for gender pay inequality in the nursing profession.
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INTRODUCTION

Seventy-Five cents for every dollar. That was what I remember learning from my mother and on TV shows I watched growing up about the difference in wages. Women made 75 cents for every dollar a man made. According to the Pew Research Center, the gender wage gap currently stands at 83 cents (Kochhar 2020). The glass ceiling is the widely recognized theoretical reason that women, trying to work their way up in their occupations, instead find themselves unable to advance with the comparable ease of their male counterparts. This term originated in 1978 with Marilyn Loden. She was speaking on a panel at the Women’s Exposition in New York where she was filling in for the only other female executive. She was originally asked to speak about how women hold themselves back in workplaces, but Loden bucked the trend and spoke about systemic issues that held women back instead. The term was popularized in the 1980s and in the years since has expanded. It is now more broadly applied to people with other types of minority statuses as well.

The glass ceiling is accompanied by another more recently advanced theory, the glass escalator. This theory was proposed in 1992 by Dr. Christine Williams of the University of Texas. Dr. Williams contends that men in workplaces that are majority female are likely to encounter an invisible structure that moves them quickly and easily upwards into prominent positions within the workplace. She studied the traditionally female dominated fields of nursing, librarianship, school teaching, and social work.

While the glass ceiling is still firmly in place, more recent scholarship has suggested that a more intersectional approach is necessary to begin to accurately describe the processes and experiences that people have in the workplace. Williams (2013) along with several others like DiBenedetto (2021), King et.al (2017), and Woodhams et.al. (2015) eventually revisited the
glass escalator theory and found that other factors like race, the type of work, and/or sexuality can also determine how much men experience the effects of the glass escalator or if they experience it at all.

Other recent studies like Agovino (2020), Cahn et. al. (2020), and Collins et. al. (2021), have begun to indicate that the ongoing Covid pandemic that started in 2020 could exacerbate these problems and rollback some of the progress that has been made over the last half century. Women were already working fewer hours than men and making less for the hours they worked. The novel coronavirus forced drastic changes to everyday life by, among other things, closing schools and businesses. These changes have put more children at home from schools and daycares and they still need to be cared for during the day. Women are expected to be the ones to bear the brunt of this. During shutdowns women had to reduce their hours worked to provide care for children. Considering the public health crisis, the still pronounced gender gap in hours and wages, this could have a ripple effect that might set women back considerably. As in the future, women could be caught trying to catch up in all of these areas where they had been making progress.

One interesting area of research is in the field of nursing. Not only was it a job field studied by Williams in her research, but it has also been found to be an occupation that focused on attracting more men to it by adopting language frequently used by minorities trying to overcome inequalities. And, as other occupations are laying workers off, medical staff continue to be in high demand as hospitals and other medical facilities experience unprecedented staff turnover and surges of overflow with patients struggling to breathe. With all this going on, could women still be being paid less than men in the nursing field?
Literature Review

Different genders experience and interact with work differently, and this is not a new subject for research. Some of the main topics of discussion regarding the gendered experiences of work are the areas of wages and compensation. Numerous researchers have looked into how to solve the problem of the gender wage gap and bring more gender parity to the workplace. In the latter half of the 20th century, women entered the workforce in higher numbers, and have made significant strides towards gender equity (England, Levine, Mischal 2020). There were some indicators of movement toward gender pay equalizing in the workplace during the 1970’s, 80’s, and 90’s. Unfortunately, since then, progress has slowed, stalled, or, in some instances, reversed according to some indicators (England et.al. 2020).

The Gaps in Employment and Education

Among the indicators was total employment numbers. England et.al. found that compared to 1970, women were employed in greater numbers in 2018 (2020). During this same period of time, women also achieved higher levels of education. Women surpassed men in number of bachelor’s degrees earned in the 1980’s through to the 2000s where they were earning more PhD’s than men (England et.al. 2020). This growth in education among women accounted for about 40% of the decrease in the pay gap since the 1980s (Hegewisch and Williams-Baron 2017). The number of women grew in STEM fields of study for a while, and the number reached a low point in 1987 where enrollment has been mostly flat for the last 20 years (England et.al. 2020). Briefly, women outnumbered men in the workplace for a few months in 2020, but that was just before the start of the beginning of the Covid pandemic (Aspan and Hinchcliffe 2021).
Occupational segregation is also a major contributor to the gender pay gap (Lowen and Sicilian 2008, Barry 2021), and was again found to have decreased at a strong and steady pace since 1970. Sadly, that significant forward momentum has not been maintained (England et.al. 2020, Hegewisch and Williams-Baron 2017). The last indicator of gender inequality studied by England, Levine, and Mischal in their 2020 study was the gender wage gap.

**Gaps in Wages and Benefits**

The gap between men’s and women’s wages remains an issue. This is true in occupations like healthcare where women frequently outnumber men. Men still made more than women overall even though women comprise 75% of the total number of workers in the healthcare field (Blau, Koebe, Meyerhofer 2021), even as wages for women continued to climb from 2001 to 2017. During this time, Barry found that the wages of nurse and doctors grew by 9.92% and 37.6% respectively (2021). Barry also notes that the gender gap narrowed in some cases because women’s wages increased faster than men’s while in other instances, women’s wages shrank less than their male counterparts (2021). Various researchers have tried to suggest reasons why issues like the pay gap and occupational segregation, are so persistent.

Some research on the focus of this slow down towards pay equity has centered on how women choose what work they seek out. But, as illustrated by Hegewisch and Williams-Baron (2017), these choices are not made in a vacuum, and are just as subject to being influenced by structural factors as anything else. Some hypothesized that women working part-time instead of full-time was a driving factor behind the gap (Pech, Klainot-Hess, Norris 2021), while others make their case for “occupational prestige” (Kleinjans, Kressel, Dukes 2017) as a factor. “A
A common hypothesis is that gender differences in preferences or abilities explain this segregation, that women may prefer jobs that provide more family friendly ‘fringe benefits’” (Lowen and Sicilian 2008). According to Lowen and Sicilian (2008), women are more likely to receive paid parental leave, flexible work schedules, childcare, and sick leave, but other, non-fringe benefits, like insurance, retirement, profit sharing, and training were distributed at roughly equal rates between men and women. Family friendly fringe benefits were not found to be a driving force behind wage inequality (Lowen and Sicilian 2008) but were instead one of many causes of the pay gap (Meara, Pastore, Webster 2019). Kleinjans, Kressel, and Dukes assert that “certain workers may feel that a particular occupation (e.g., teacher) provides more personal satisfaction than another (e.g., stock broker) because it is perceived as providing a greater contribution to society – a notion that we argue is reflected in its occupational prestige” (2017). They conclude that because of this, women are more likely to seek out jobs with higher levels of “occupational prestige” but lower wages than are men (Kleinjans, Kressel, Dukes 2017).

The host of explanations for the pernicious pay gap include parenthood (Maera et.al. 2019, Pech et.al. 2021, Collins, Landiver, Ruppanner, Scarborough 2020), gender segregation (Wilson, Butler, Butler, Johnson 2017, Pech et.al.2021, Maera et.al.2019, England Et.al.2020), unionization (Maera et.al. 2019), educational attainment (Wilson et.al. 2017), geography (Wilson et.al. 2017), and part-time work (Maera et.al. 2017, Pech et.al. 2021). Of these, part-time work hours have been shown to be more likely to affect women than men (Pech et.al 2021, Meara, Pastore, Webster 2019). Sometimes this is by choice, as some women opt to work part-time due to a desire to care for their children. But these are not always the circumstances that lead to women working fewer hours than men, and this inequality in hours worked is one aspect of the problem that appears to be going from bad to worse.
Gender in Nursing

For better or worse, some have not been able to follow safer-at-home orders to ride out the pandemic. Those in the medical industry in particular have become especially important as hospitals and other care facilities experience surges of overcrowding due to waves of coronavirus infection. Nations have seen that the demand for qualified nursing staff has grown as hospitals become overcrowded and patients are waiting for lifesaving treatment. However, even as demand has grown and continues to grow, there has been a shortage, says Haas, Swan, and Jessie (2020), where nurses and midwives account for about 50% of the shortage. The medical professions have long been fields heavily segregated by gender (Wilson et. al 2017). Doctors are predominantly men while nursing is a job field that is comprised of around 85% women (Himmelstein, Venkataramani 2019, Blau, Koebe, Meyerhofer 2021). There have been some efforts to change the gender demographics in nursing as well as other segregated occupations. Research suggests that these attempts at desegregation have largely been misguided. This frequently takes the form of discussing men as a missing demographic within the occupation and concluding that they should actively be recruited. When it is framed in this way, it often ignores the privileged status men, and especially white men, have in the larger society (Cottingham 2019). In this way, men are effectively coopting the language of oppressed and marginalized groups to gain further advantage.

Nursing is also a profession that is has, historically, been economically vulnerable (Mills 1989, Himmelstein, Venkataramani 2019). Wages in this sector have never been great, and a decent wage is a key aspect of attracting and retaining staff. Mills says that “[a] nurses’ average maximum salary is approximately $7,000 higher than the average beginning salary, and most staff nurses reach their top salaries within five to seven years” (1989:270). This is, Mills says,
due to salary compression that limits career growth (Mills 1989). Though that data was from 1987, this is yet another area of gender inequality for which little seems to have changed between then and now. As of 2019, wages for some nurses were still low enough that 7.5% of female health care workers were on food stamps, 2.6% relied on housing support, and 7.1% were without health insurance (Himmelstein and Venkataramani 2019). There is also little in the way of educational opportunities for those in the nursing field to advance in some cases and this has led to some positions in the industry being difficult to fill (Issel, Lurie, Bekemeir, 2016). These represent examples of the policies and procedures that DiBenedetto argues constitutes a “sticky floor” which keeps women in lower paid positions (2021).

There exists a racial component to this inequality. The gender inequalities seen today also happen and should be placed in the larger context of other concurrently existing inequalities. While as a whole, women make 20 cents less than men per dollar, women of color are still only making 75 cents per dollar (Agovino 2020). Among those in the nursing profession, Black women were concentrated in positions with lower wages and saw those wages decline between 2005 and 2015 (Himmelstein and Venkataramani 2019). This is unsurprising given that care work occupations like nursing are often undervalued in American society (Dill, Price-Glynn, Rakovski 2016), and is especially unfortunate given how critical black mothers are in the financial security of their families (Cahn and McClain 2020). This has all been worsened by the pandemic, when the lack of access to childcare has played a role in women’s engagement or disengagement in the labor force (Cahn, McClain 2020, Collins, Ruppanner, Landiver, Scarborough 2021).
The Glass Escalator – Men in Traditionally Female Occupations

If care work is undervalued but men are borrowing the language of the oppressed and being recruited into this field, what experience do men have in traditionally female occupations? The result is what has become known as the glass escalator. The phrase describes how men encounter “structural advantages in these [female dominated] occupations which tend to enhance their careers” (Williams 1992:253). Across four female-dominated occupations, teaching, library science, social work, and nursing, she found that men gain even greater advantages in these occupational settings in part because there were so few of them (Williams 1992). This is contrary to women who enter professional settings with higher numbers of men, who in those instances experience discrimination. Williams’s 1992 study has become incredibly important in our understanding of the gendered differences of work, but this theory, like any other, has been developed further since then. All men do not experience this glass escalator phenomenon, and those that do may not experience it equally.

Several researchers have built onto the original theory of the glass escalator since its inception, fleshing out how non-white men experience work in female occupations. Men who are in health care occupations and who do work where they provide direct, hands-on care for patients reported lower earnings than other men once other demographic factors were controlled for (Dill, Price-Glynn, Rakovski 2016). Aspects other than occupation and gender are also important in determining glass escalator effects. Race (Williams 2013, Price-Glynn, Rakovski 2012), sexuality (Williams 2013), class (Williams 2013), citizenship (Williams 2013), nationality (Price-Glynn, Rakovski 2012), and contextual factors within a workplace (Price-Glynn, Rakovski 2012) are also relevant factors that determine who will ride on the glass escalator.
Current research does not indicate that black men experience a glass escalator while working in traditionally “pink-collar” jobs. However, there is some to suggest that disadvantaged men are overrepresented in “lower level and part-time work alongside women” (Woodhams, Lupton, Cowling 2015:277). Once at these jobs these men do not experience the glass escalator due to gendered racial stereotypes which limit the extent to which black men can identify and bond with their supervisors and colleagues (Wingfield 2009). The resulting tension limits the extent to which black men can experience the glass escalator (Wingfield 2021). Horizontal stratification also has some important implications for the theories around glass structures.

We have seen how men in female occupations are moved upwards, but there is also evidence to suggest that some men sort themselves horizontally into certain positions or “gender appropriate” specialties. In care work, men tend to be drawn more into “less feminized” areas (Snyder and Green 2008, Bradford and Bradford-Stevenson 2021) since men who do end up on the more nurturing side of care work are “invisible” in that they feel less masculine because of their job (Price-Glynn and Rakovski 2012). This leads to more men doing jobs that are high intensity, technologically sophisticated, and instrumental rather than nurturing as a way to negotiate and maintain their preconceived notions of masculinity (Snyder and Green 2008 Smith et.al. 2021). Trying to maintain a masculine identity in such an environment can cause additional stress on men (Smith, et.al. 2021). Some men may also choose to leave the profession entirely as well (Smith et.al. 2021). Of course, structural factors like an organization’s hiring practices and preferences can also sift men and women in the nursing field into specialized nursing jobs (Snyder and Green 2008). While the concept of the glass escalator focuses on men, if men are being positioned in higher positions within firms, then this could impact the wages women earn, and the gap between the two could be wider because of it.
Hypotheses

In some jobs with historically done held by a majority of women, men are identified by superiors and pushed upwards into higher paying, more prestigious positions. In the nursing field however, men have been found to seek out specialized jobs within nursing. Sometimes this is due to men looking for positions that earn a higher wage. In other cases, it may be because these jobs are perceived to be more masculine. The jobs men tend to seek out to feel more masculine are typically those that require more technological sophistication and work more with instruments rather than caring for patients (Snyder and Green 2008 Smith et.al. 2021).

The following paragraphs explain five nursing jobs listed in the American Community Survey (ACS) data, which my data analysis is based on. I offer a brief description for each nursing job, including wages, minimum job credential requirements, job descriptions, and possible additional job paths. Such information comes from the website (bls.gov) of the Bureau of Labor Statistics and was reported in 2020.

Registered Nurses. These nurses typically need a bachelor’s degree to start out with, and registered nurses must be licensed. Their starting median salary is $75,330 per year, or $36.22 per hour. Registered nurses can work in hospitals, physician’s offices, home health services, nursing care facilities, outpatient clinics, and schools. In their jobs, registered nurses provide and coordinate patient care which includes assessing, observing, and recording medical conditions, administering treatment and medicines, creating care plans, and educating patients about various health conditions. Their duties are dependent on which healthcare setting they work in, and they may choose to adopt a specialty in their career. Such specialties include the cardiovascular nurse who specializes in heart conditions, the critical care nurse who work in Intensive Care Units, and the neonatal nurse who cares for newborn infants with health issues.
Nurse Anesthetists. A Master’s degree is the typical starting place for becoming a nurse anesthetist. The median pay for this job field is $117,670 per year or $56.57 per hour. These nurses work in a variety of settings such as state, local, and private hospitals, outpatient care centers, and in the offices of other physicians. In their job, nurse anesthetists administer anesthesia as well as care for patients throughout surgical, therapeutic, diagnostic, or obstetrical procedures. They are also one of the people responsible for monitoring the patients’ vitals and adjusting the anesthesia if needed.

Nurse Practitioners. Becoming a nurse practitioner also requires a master’s degree as they deliver more advanced treatment to patients. Their pay falls into the same median pay range as Nurse Anesthetists, earning them $117,670 per year and $56.57 an hour. They deliver advanced nursing services and may work independently from or in collaboration with physicians. Unlike nurse anesthetists, nurse practitioners can function as primary and specialty care providers. They can also care for a specific population of people. They may choose to specialize in pediatric, adult, or geriatric health. They may also choose to work in psychiatric medicine.

Practical and Vocational Nurse. To become a practical and vocational nurse requires completing a state-approved educational program that can be found at a technical school or community college. The program usually takes about a year to complete. The median income for those in this nursing category is $48,820 per year or $23.47 per hour. These nurses offer basic forms of care including changing bandages, inserting catheters, and reporting a patient’s status to registered nurses and doctors. The tasks performed by these nurses may also vary by state as some states allow them to start IVs or administer medication while other states do not.

Nursing Assistants. Nursing assistants or, in some states, certified nursing assistants (CNAs) make a median income of $30,830 per year or $14.82 per hour. To be one, typically a
high school diploma or equivalent is required along with completing a state-approved training program that will grant them a license. This program consists of instructions on the basic principles of nursing and a period of supervised clinical work. In some states they may choose to pursue other credentials, like certified medication assistant (CMA) that would allow the CNA to dispense medication. Many nursing assistants work at hospitals, but they may also work at nursing or retirement homes, nursing care facilities, and home health services.

As discussed in my literature review earlier, men and women are still being paid unequally. This extends to occupations that have historically been conceived of as “women’s work”, or jobs where women outnumber men. Nursing, as found by Christine Williams and others, is one such occupation. It tends to be a field primarily associated with women, with relatively few men choosing to pursue a career in nursing. Of the men that do, some report earning higher wages than their female counterparts. In some cases, this is because they are positioned by their managers to ascend to higher positions with better pay, and other times it may be because men are being recruited into the nursing field because of a perceived shortage (Cottingham 2019). Increased pay may be one possible way of attracting new male candidates to nursing.

Building on my literature review, my study develops the following two hypotheses that predict the gender gap in the nursing field:

**Hypothesis 1:** The nursing jobs with higher pay are associated with more men than those nursing jobs with lower wages.

**Hypothesis 2:** Male nurses tend to have higher wages than female nurses.
Methodology

Data & Sample

As mentioned briefly earlier, this study utilizes sample data drawn from the American Community Survey (ACS). The data used will be from the 2019 sample of the ACS. This dataset was acquired from the Integrated Public Use Microdata Series (IPUMS) website. The American Community Survey is a supplemental survey conducted annually through the United States Census Bureau. It collects data on “jobs and occupations, educational attainment, veterans, whether people own or rent their homes, and other topics” (ACS 2021). Surveys are conducted in four ways: internet, mail, telephone, and in-person interviews. Participants are randomly selected through their addresses and those selected are legally obligated to complete the survey. About 3.5 million addresses are selected each year to respond to the ACS. In the 2019 sample there were about 3.54 million households selected to be a part of the survey.

Analytical Strategy

This study conducts multiple types of statistical analyses. First, I use the crosstab analysis to test the first hypothesis, predicting that men are more likely to work in the relatively higher-pay nursing fields. Crosstab analysis helps reveal the percentages of men and women working in each of the nursing occupations in this study. The accompanying chi-square analysis will show if there are any associations between a person’s gender and their occupational code and whether or not these associations are statistically significant. Second, to examine the difference in wages between men and women in the female dominated nursing field, multivariate regression analysis will be used. Multivariate regression analysis will show what, if any, association there is between
gender and wages. It will also add the nursing occupation, age, and race as control variables. All statistical analyses have been conducted by RStudio.

Variables

Dependent Variable

*Income.* The data for income was reported by participants in Question 43a of the American Community Survey. In this question, respondents were asked to self-report their income. They were asked to report: “*Income in the Past 12 Months - Wages, salary, commissions, bonuses, or tips from all jobs.* Report amount before deductions before taxes, bonds, dues, or other items.” Responses from participants ranged from $0 to $999,999 per year. Income in this research will be used as the dependent variable. The median income for the nursing fields used here is $42,000, and the mean income is $48,178 across all five nursing jobs per year. The maximum income reported by an individual in this sample was $714,000 per year.

Independent Variables

*Sex.* This research study will utilize information collected from the response to question 3 regarding the sex of the respondents. Question 3 asks: “*What is this person’s sex?*” Respondents are asked to check one box indicating whether they identified as either Male or Female. Summing the number of people from the two response categories gives a total of 3,239,553 in the 2019 sample. This number could be different due to some people, those who do not conform to one of these binary options, opting to leave the response blank. In the current research, the sex reported in question 3 will be used as the independent variable.

*Occupation.* This data was gathered from question 42e of the American Community Survey. Study participants were asked in this question: “*What was this person’s main
occupation?” This was an open-ended question that allowed for respondents to describe their job without needing to select from a limited number of options. These options were then coded into multiple categories in the nursing field. All codes associated with the nursing field were used for this research, and they were: 3255, 3256, 3258, 3500, and 3603. These codes corresponded to Registered Nurses, Nurse Anesthetists, Nurse Practitioners, Practical and Vocational Nurses, and Nursing Assistants, respectively. Summing the sample totals for all segments of the nursing field gives a total number of 65,496 participants in this study.

Control Variables

Age. This data was gathered from question 4 regarding the age of the respondent. It was a fill-in-the-blank response. The question asks, “What is person 1’s age and what is Person 1’s date of birth?”. The responses in the data range from less than a year to 135. However, for the purposes of this study, the youngest person to report working as a nurse was 16, and the oldest was 96.

Race. Data used in this research comes from question 6 in the American Community Survey. Question 6 asks, “What is Person 1's race?”, and respondents were instructed to mark one or more boxes that corresponded to their race. The possible responses are: “White, Black or African Am., American Indian or Alaska Native -- Print name of enrolled or principal tribe., Asian Indian, Japanese, Native Hawaiian, Chinese, Korean, Guamanian or Chamorro, Filipino, Vietnamese, Samoan, Other Asian -- Print race, for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on., Other Pacific Islander? Print race, for example, Fijian, Tongan, and so on., Some other race -- Print race.”. Originally, the ACS data code for RACE separated people into nine different categories: White, Black/African American, Native American/Alaska Native, Chinese, Japanese, Other Asian/Pacific Islander, Other Race, 2 Major Races, and 3 or More
Major Races. According to the Census Bureau, the Other Race category is for people who do not identify with any of the standards on race and ethnicity set by the U.S. Office of Management and Budget (OMB) in 1997. People who reported more than one race, or “multiracial” were categorized into the 2 Major Races and 3 or More Races originally. These categories were then recoded in RStudio into 4 categories: Asian, Black, White, and Other. This study combines the Chinese, Japanese, and Other Asian/ Pacific Islander categories into the Asian category. This study also recodes the Native American/Alaska Native, Other Race, 2 Major Races, and 3 or More Major Races into the single, Other category.
# RESULTS

Table 1: List of Variables in the Analysis

<table>
<thead>
<tr>
<th>Continuous Variables</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>48177.58</td>
<td>44657.85</td>
</tr>
<tr>
<td>Age</td>
<td>45.92</td>
<td>15.00</td>
</tr>
</tbody>
</table>

Categorical Variables

<table>
<thead>
<tr>
<th>Categories</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male (Reference)</td>
<td>10.58%</td>
</tr>
<tr>
<td>Female</td>
<td>89.42%</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
</tr>
<tr>
<td>Registered Nurses (Reference)</td>
<td>60.47%</td>
</tr>
<tr>
<td>Nurse Anesthetist</td>
<td>0.80%</td>
</tr>
<tr>
<td>Nurse Practitioner</td>
<td>3.97%</td>
</tr>
<tr>
<td>Practical/Vocational Nurse</td>
<td>12.05%</td>
</tr>
<tr>
<td>Nursing Assistant</td>
<td>22.71%</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>Whites</td>
<td>75.01%</td>
</tr>
<tr>
<td>Blacks</td>
<td>12.85%</td>
</tr>
<tr>
<td>Asians</td>
<td>7.46%</td>
</tr>
<tr>
<td>Other</td>
<td>4.68%</td>
</tr>
</tbody>
</table>

Table 1 reports the descriptive statistics for all the variables including in my data analysis. As Table 1 shows, the continuous variables are Age and Income. The mean income for all nurses in this study is around $48,177 annually, and the mean age is almost 46 years old. The categorical variables begin with Sex. Women outnumbered the men in this study with almost 90% of people in the sample being women. The next is Occupation where there is a majority of registered nurses. 60.47% of the nurses in the sample were registered nurses with the next largest groups being nursing assistants at 22.71% and the Practical and Vocational Nurses making up 12.05%. The smallest groups for the occupation variable were Nurse Practitioners and Nurse Anesthetists with each group only having 3.97% and .80% respectively. For the last categorical variable, Race, Whites made up 75% of people while the remaining 25% was composed of Black, Asian and Other racial groups.
Table 2. Crosstab & Chi-Square for Nursing Occupations and Sex

<table>
<thead>
<tr>
<th></th>
<th>Registered Nurse</th>
<th>N. Anesthetist</th>
<th>N. Practitioner</th>
<th>Vocational Nurse</th>
<th>Nurse Assistant</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>4136</td>
<td>222</td>
<td>261</td>
<td>799</td>
<td>1511</td>
<td>6,929</td>
</tr>
<tr>
<td></td>
<td>10.40%</td>
<td>42.50%</td>
<td>10.00%</td>
<td>10.10%</td>
<td>10.20%</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>35,468</td>
<td>300</td>
<td>2339</td>
<td>7096</td>
<td>13,364</td>
<td>58,567</td>
</tr>
<tr>
<td></td>
<td>89.60%</td>
<td>57.50%</td>
<td>90.00%</td>
<td>89.90%</td>
<td>89.80%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>39,604</td>
<td>522</td>
<td>2600</td>
<td>7,895</td>
<td>14,875</td>
<td>65,496</td>
</tr>
<tr>
<td></td>
<td>60.50%</td>
<td>0.80%</td>
<td>4.00%</td>
<td>12.10%</td>
<td>22.70%</td>
<td></td>
</tr>
</tbody>
</table>

Pearson’s Chi-Square Test

Nursing Occupation & Sex

x - squared = 569.38  
df = 4  
p-value < 2.2e-16

Table 2 presents the crosstab analysis for Sex and Nursing Occupation. This analysis of the Sex and Nursing Occupation fields reflects how Men and Women are represented within the nursing occupations. Men made up 6,929 (10.6%) of the people in the dataset with the other 58,567 (89.4%) respondents being Women. Among the Registered Nurses, Nurse Practitioners, Practical and Vocational Nurses, and Nursing Assistants, Men represented 10.4%, 10.0%, 10.1%, and 10.2% respectively. The percentage of Men and Women in the Nurse Anesthetist job code was the closest to parity with Men occupying 42.5% of the category and Women the other 57.5%.
Table 3 is the crosstab analysis for nursing occupation and race. It indicates the percentage of each racial category is in each nursing job field. These results show that a majority of the White, Asian, and Other categories are present in the Registered Nurse job fields while a majority of Black nurses are present in the Nursing Assistant category. This is similar in other nursing job fields as well.
Table 4. Regression Analysis of Sex on Income Controlling for Occupation, Age and Race

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>61112***</td>
<td>67793.2***</td>
<td>74337.34***</td>
<td>88767.25***</td>
</tr>
<tr>
<td>Male (Reference)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>-14464.70***</td>
<td>-11893.70***</td>
<td>-11,488.01***</td>
<td>-10269.80***</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registered Nurse (Reference)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Anesthetist</td>
<td>79804.10***</td>
<td>80104.89***</td>
<td>81683.57***</td>
<td></td>
</tr>
<tr>
<td>Nurse Practitioner</td>
<td>32656.20***</td>
<td>32572.97***</td>
<td>33181.92***</td>
<td></td>
</tr>
<tr>
<td>Practical/Vocational Nurse</td>
<td>-23127.10***</td>
<td>-23089.32***</td>
<td>-23233.10***</td>
<td></td>
</tr>
<tr>
<td>Nursing Assistant</td>
<td>-35774.30***</td>
<td>-36598.97***</td>
<td>-37362.10***</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td>-146.41***</td>
<td>-142.12***</td>
<td></td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td></td>
<td></td>
<td>6313.55***</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td></td>
<td></td>
<td>17946.55***</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td>4987.76***</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.00991</td>
<td>0.1939</td>
<td>0.1962</td>
<td>0.2084</td>
</tr>
</tbody>
</table>

*p<.05; **p<.01; ***p<.001

Table 4 shows the multivariate linear regression models that predict the variation of wages affected by sex as well as other control variables. Sex was found to be statistically significant at the p<0.001 level in models 1, 2, 3, and 4. This suggests that an individual’s sex affects how much income they report.

Model 1 shows that Sex is statistically significant at the p<0.001 level. In this first model, compared to men, women are found to have earned $14,464 less than men in 2019. Each model indicates a shrinking but persistent gap in wages. Controlling for Occupation in Model 2 with the registered nurse job code used as a reference, shows that
the Occupation was significant in every category of the nursing field at the p<0.001 level. This corresponded with an increase in the wages women earned, but women were still found to have earned $11,893 less than men. The Age variable was found to be statistically significant in regression models 3 at the p<0.001 level. When controlling for age in Models 3 women were found to have made $11,488 less than men annually. When controlling for Race in Model 4, race was found to be statistically significant at the p<0.001 level. In model 4, the White category was used as a reference. Controlling for race corresponds with a decrease in the difference of wages between men and women. However, men still earn $10,269 more than women annually.

**DISCUSSION**

The crosstab and chi-square analysis in tables 2 and 3 show that men are found in greater numbers in the Nurse Anesthetist job, and that races in the White, Asian, and Other categories were found in higher numbers than Black in the higher earning jobs. Across all regression models, the data reflect a wage gap exists between women and men in the nursing occupation, a pattern that holds firmly when my control variables are added to the models and contribute to the variation of wages. Unsurprisingly, some specialty nursing occupations that require more education and specialized training, like the Nurse Anesthetists, make more than others. This is also the position that requires the most training and seems least likely to require being directly involved in patient care. Age was associated with a loss in wages each year and was found to be significant in
each model where it was integrated. Race was also significant in the regression models. Race, once controlled for was found decrease the wage gap between men and women.

Hypothesis one is supported by the data found in the crosstab and chi-square tables. According to the analysis, men were more represented at statistically relevant levels in the nurse anesthetist category than in any other of the job codes. With the job descriptions in mind, those working as nurse anesthetists would be less likely to engage in directly caring for patients. Instead, the nurse anesthetist would be more likely to only interact with patients as they go under and are brought out of anesthesia. There is also likely a high level of precision and risk involved in putting someone under anesthesia which would suggest a higher level of prestige for those that can master the skill. Men being more represented in the nurse anesthetist job and the highly skilled, potentially risky, and technical aspects of that nursing specialty may indicate that men are either seeking out positions that have higher pay, that they are sorting themselves into this job to maintain their perception of masculinity, or that they are seeking out higher prestige positions, or some combination of these factors.

Hypothesis two is also supported by the data. In Model 1, women earned $14,464 less than men did, and even though that gap decreased once all control variables were in place, women still earned $10,269 less than men in the nursing occupation. This is reflective of the previous research done in the area of the gender pay gap. Men, even when working in historically female jobs, tend to earn more than their female counterparts. These results are similar to findings by other researchers that show the wage gap is decreasing but still present (Hegewisch and Williams-Baron 2017). As Barry notes, sometimes the gap is narrowed by women’s wages outpacing men’s or at least not
shrinking as quickly (2021). This is an industry where one of these outcomes may be true.

In this study, age was found to be significant by the regression models. The results show that in model 3 where the Age variable is added, there is a decrease in the wage gap between men and women. This decrease is significant statistically and represents a decrease in the gap from $11,893 in model 2 to $11,488 per year in model 3 representing a $495 per year decrease in the wage gap. In the context of the findings presented by Issel, Lurie, and Bekemeir, nurses do not need to be hindered by time since they may be unable to increase their income through educational opportunities (2016). However, changes in entry-level educational requirements for some of these nursing fields might explain some of this. Someone might still become a Nursing Assistant with a high-school education, but the other nursing jobs looked at in this research require college degrees to do. It may be the case that some of the people working in these jobs were hired when requirements were lower, and they stayed in their jobs. But, as we grow more dependent on credentials in the US, when new employees with college degrees were hired these new hires start at higher rates of pay than the older more experienced nurses which might have worked to counteract the limited on the job educational opportunities.

Race was also found to be significant in regression model 4. Controlling for race decreases the wage gap again from $11,488 in model 3 to $10,269 in model 4. Findings for other racial demographics were significant and interesting as well. Black/African American, Asian, and Other Race were all shown to be statistically significant. All of these groups were found to have earned more than the White category who acted as the
reference group. The highest earning above the reference was Asian earning $17,946, but Black and Other groups earned more in this model as well. According to the literature, Black women in the nursing profession are usually found working in positions with low wages, and those wages were experiencing decline (Himmelstein and Venkataramani 2019). Black and African Americans accounted for 12.9% of the people in this sample data, and as suggested by the literature they tended to be clustered in the nursing fields of Practical and Vocational Nursing (16.7%) and Nursing Assistant (45.7%). Given the information from the Bureau of Labor Statistics, these were the lowest paying jobs in this sample. How these racial demographics were able to exceed the reference group is unknown based on the data at hand though the data used may have something to do with it. The data used in this study did not separate Non-Hispanic Whites from those who identified as Hispanic. If ethnically Hispanic nurses also experience lower wages, and there were enough in the sample it could have lowered the wages for the reference group. It may have also been because of the number of hours worked which is data that is not examined in this study. Lastly, this may also be because of where they worked, since urban nurses make more than nurses working in rural areas and have more choice to move to higher paid nursing jobs in their area. Some or all of the factors could have contributed to the findings in this study and further research is needed to explain these findings especially with the pandemic wreaking havoc on the US healthcare system and the nursing occupations.

The ongoing public health crisis of COVID-19 leaves those in the healthcare industry facing many new and unexpected challenges. Covid related unemployment among women has reached levels not encountered since 1988 (Aspan and Hinchcliffe
As of September 2020, 865,000 women had left the labor force (Agovino 2020, Aspan and Hinchcliffe 2021, Cahn and McClain 2020). This has some economists predicting up to a 5% increase in the gender wage gap (Aspan and Hinchcliffe 2021). Women with “young children have reduced their work hours four to five times more than fathers” (Collins et al. 2020,). As Woodhams et al. (2021) notes, one of the surest ways to increase an individual’s wages is to remain in the labor force and at the same workplace over time. COVID-19 could have a significant negative impact on the women who have had to leave the workforce. Research around the gender gap is also likely to remain important part of the conversation in the near future as the pandemic shakes up demographics in workplaces around the globe, causing some people to leave the workforce whether they want to or not. If this turns out to be the case on a large scale, further research will be needed to direct policy on how women can overcome this challenge and reenter the workforce on even footing with the men they seek to work alongside.

**Limitations**

Though this study extended existing research on these topics, however slightly, further research is needed in areas that are more intersectional. Future work could focus on the roles of educational level, and length of time in a single occupation or even with a single workplace in conjunction with gender on the wages of those in the nursing field. The nursing jobs that offer higher wages also require higher educational attainment. Data for the number of children was listed as unavailable from the American Community Survey 2019 at the time of this study. Future work could pursue this area to examine the
impact of a larger family size on the wages of those in nursing. Data for Race used for this research, included those of Hispanic ethnicity but did not differentiate those of Hispanic ethnicity with the White category. By the time this was discovered, it was too late to retrieve a new data set that would allow for differentiating between White and Non-Hispanic White respondents. Future scholarship could also be more inclusive with regards to gender. The dataset used here from the American Community Survey 2019 included only binary options for sex. The data used in this sample may not paint a true picture of the gender diversity present within workplaces and may miss significant experiences of inequality.

Conclusion

This research focuses on the medical field of nursing and specifically studied were the nursing fields of registered nurses, nurse practitioners, practical/vocational nurses, nurse anesthetists, and nursing assistants. This study examined the influence of sex on wages with sex as the independent variable and wages as the dependent variable. The nursing occupations were held constant while age and race were utilized as control variables to show how wages would be affected by each. Nursing is one of several occupations that are heavily segregated by sex, with many more women than men in these workplaces. This analysis demonstrated in Table 2. that men were found more frequently in the higher paying nurse anesthetist job than in any other. Age and race were also significant. Aging corresponded with a decrease in the wage gap over time while many of the different racial categories were associated with higher wages than the literature would have suggested. Many of the findings presented here are consistent with
findings from other authors that show a persistent wage gap present even in occupations where women are the majority. There is no question of whether men and women have differing experiences in the workplace. The difference in wages may be shrinking down from the canyon sized gap that used to exist between the genders. But there is still a significant difference in between man and women resulting in a crevasse big enough for too many to fall into.
References


