Comparing the Socioeconomic Well-Being of Workers Across Healthcare Occupations

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Bianca K. Frogner, PhD, Susan M. Skillman, MS, Davis G. Patterson, PhD, Cyndy R. Snyder, PhD

KEY FINDINGS

This study investigates socioeconomic well-being, including occupation-skill match, financial situation, and reliance on state/federal assistance programs, among individuals working in healthcare. We analyzed 2015 data from an ongoing monthly household survey called the Annual Social and Economic Supplement of the Current Population Survey (CPS). The key findings from this study were that:

- Almost two-thirds of healthcare occupations in this study required less than a bachelor's degree for entry, consistent with statistics that the majority of healthcare occupations are low- to middle-skilled.
- Those working in occupations requiring a high school degree or below was the category with the highest percentage of people of color.
- There is a potential mismatch between skill and occupation; for example, over half of the individuals working in occupations requiring a high school degree or less attained more than a high school level of education.
- Despite working in healthcare settings, individuals across all education categories lacked health insurance ranging from 3.8% among those working in jobs requiring a bachelor's degree to 15.6% among those working in jobs requiring a high school degree or below. Uninsured rates were significantly higher among part-time workers in ambulatory and long-term care settings.
- Among those in occupations requiring a high school degree or below, 26.3% relied on the Earned Income Tax Credit, 18.2% relied on Medicaid, and 18.7% relied on the Supplemental Nutrition Assistance Program.
- Long-term care settings have the highest proportion of individuals working in occupations requiring a high school degree or less, and 80% of these individuals relied on one or more state/federal assistance programs.

Workforce planners and policymakers who advocate for healthcare as a promising industry with growing entry-level job opportunities need to ensure that those entering these occupations have a viable career path. Employers wanting to reduce turnover for their workers in low-skilled occupations should find ways to address financial risks and worker's reliance on state/federal assistance programs.

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BACKGROUND

The U.S. healthcare industry has been an engine for job growth over the last couple of decades. Much of the job growth has occurred among healthcare occupations that require less than a bachelor's degree, and are often referred to as low- and middle-skilled occupations. Healthcare occupations predominate among the twenty occupations with the fastest projected growth rate over the next decade according to the U.S. Bureau of Labor Statistics (BLS).[1] Many of these occupations are allied health occupations such as physical therapy assistants/aides, occupational therapy assistants/aides, and home health aides. These positions are common entry points for a healthcare career given their low education entry requirements. Federal agencies such as the Administration for Children and Families have taken notice of these growing job opportunities in healthcare, funding programs targeting recipients of Temporary Assistance for Needy Families and other low-income groups to train for entry-level healthcare occupations.[2] Also, the topic of how to move people into jobs requiring less than a bachelor's degree in healthcare has been discussed in several forums held by the country's leading researchers.[3]

As the U.S. healthcare system seeks to reduce costs, employers are finding new and creative ways to use individuals in low- and middle-skilled positions who are less costly to employ.[4-9] Questions are emerging about the quality of these positions, especially in settings that rely heavily on low- and middle-skilled occupations, such as long-term care. There is concern about whether the country is building a health system on a weak workforce foundation. A recent report found that despite high demand for long-term care workers, individuals had been exiting long-term care at a high rate and moving into unemployment or out of the labor force altogether; in addition, these individuals had high rates of disability and poverty.[10] There is growing apprehension among researchers that greater reliance on a low-skilled workforce without adequate pay may lead to high turnover, which can disrupt continuity of care and contribute to poor quality of care.[11-13]

Labor economists[14] have studied the deficiencies in socioeconomic well-being of workers across occupation skill levels. Less attention has been given to the socioeconomic well-being of individuals working in healthcare, which may be an important contributor to turnover. In this study, we examined socioeconomic well-being, defined as being above the federal poverty level, having health insurance, and not relying on state/federal assistance programs, among individuals working in healthcare. We categorized healthcare workers according to the education requirements of their occupation, which allows us to determine whether socioeconomic well-being varies by skill.

METHODS

We analyzed data from the 2015 Annual Social and Economic Supplement ("March Supplement") of the Current Population Survey (CPS).[15] The CPS is an ongoing monthly household survey of approximately 100,000 households, or 200,000 individuals, conducted by the BLS and the U.S. Census Bureau. We restricted our analysis to employed respondents age 18 to 75, and used survey weights to generalize the results to the civilian non-institutionalized U.S. adult population.

Using the BLS Occupational Outlook Handbook, we assigned individuals into one of five categories based on the minimum education requirement of the occupation in which they were employed: 1) high school degree (or equivalent) or below, 2) post-secondary non-degree award, 3) associate degree, 4) bachelor's degree, and 5) above bachelor's degree.[16] Some occupation titles in CPS, such as

diagnostic technicians/technologists, represent a heterogeneous set of occupations with varying levels of education requirements. For purposes of this study, these groups were categorized by the lowest education entry requirement in the group. Some occupations have changed their education requirements for entry over time, such as physical therapists' move from requiring a bachelor's degree to requiring a doctoral degree to enter the field. We used education levels reflecting requirements at the time of this study.

We compared demographic and socioeconomic characteristics of individuals across each of the five education requirement categories. These characteristics included sex, age, marital status, ethnicity (Hispanic/Latino versus not), race (person of color versus white), citizenship status (not a U.S. citizen versus U.S. citizen) geographic location (metro versus non-metro), marital status (married versus single/divorced/separated/widowed), having a child under age 5 in the household, part-time (less than 35 hours per week) vs. full-time work status (35 hours or more), and highest educational degree attained. As defined by the data, people of color includes individuals self-identified as Black, Asian, Pacific Islander, Alaskan Native, American Indian, or multi-racial. We also examined health-related characteristics of individuals including self-reported health status (fair/poor versus good/very good/excellent health), having a disability that interferes with ability to work, and having any physical or cognitive difficulties.

Table 1: Individual Characteristics of Healthcare Workers by Education Requirement of Occupation

	Education Requirement of Occupation				
	High School or Below	Post-secondary Non-Degree Award	Associate Degree	Bachelor's Degree	Above Bachelor's Degree
N	4,254,832	2,364,513	3,992,030	2,078,141	3,478,083
Female	84.6% [3,4]	82.0% [7]	86.3% [8,9]	77.8% [10]	60.3%
Age (mean)	41.0 [2,3,4]	44.3 [5,6,7]	43.5	44.4	44.4
Age category					
Age under 35	39.1% [2,3,4]	40.6% [5,6,7]	29.0%	29.4%	27.3%
Age 35 to 54	41.1% [2,4]	42.0% [5,6]	47.9%	46.0%	47.2%
Age 55 & above	19.8% [4]	17.4% [5,6,7]	23.1%	24.6%	25.5%
Hispanic/Latino	16.6% [2,3,4]	15.8% [5,6,7]	7.9%	10.9%[10]	6.9%
Person of color	37.3% [1,2,3,4]	26.6% [7]	22.9%	22.5%	19.7%
Not U.S. citizen	9.3% [1,2,3,4]	4.4%	3.6%	2.6%	4.7%
Living in non-metro area	18.1% [3]	14.8% [7]	14.4% [9]	12.7%	9.8%
Not married	58.6% [1,2,3,4]	49.7% [5,6,7]	36.1%	42.1%	30.6%
Child under age 5 in household	13.8% [4]	16.2%	15.4%	12.9% [10]	18.1%
Part-time work status (<35 hours per week)	29.3% [1,2,3,4]	22.5% [6,7]	18.8% [8]	12.7%	15.6%
Fair/poor self-reported health status	9.5% [1,2,3,4]	5.5%	4.0%	5.8%	3.8%
Any work disability	3.8% [4]	3.5%	3.2%	3.4%	1.9%
Any physical/cognitive difficulty	4.8% [1,3,4]	2.7%	3.1%	2.3%	1.9%

Significant difference at p≤0.001 between: [1] high school or below versus post-secondary non-degree award; [2] high school or below versus associate degree; [3] high school or below versus bachelor's degree; [4] high school or below versus above bachelor's degree; [5] post-secondary non-degree award and associate degree; [6] post-secondary non-degree award and bachelor's degree; [7] post-secondary non-degree award and above bachelor's degree; [8] associate's degree and bachelor's degree; [9] associate's degree and above bachelor's degree; [10] bachelor's degree and above bachelor's degree

Note: People of color includes individuals self-identified as Black, Asian, Pacific Islander, Alaskan Native, American Indian, or multi-racial. Significant differences between means conducted using unpaired two sample t-test

Source: Author calculation of data extracted from Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 4.0. [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

We looked at three measures of financial risk including whether the individual had a mean hourly wage rate below $15, was at or below the federal poverty level, or lacked health insurance. We also looked at whether the individual relied on state/federal assistance programs including the Earned Income Tax Credit (a tax benefit for working individuals with low to moderate income), Supplemental Nutrition Assistance Program (commonly referred to as food stamps), or Medicaid. We compared individuals across three broad sectors of the healthcare industry (hospital, ambulatory care, and long-term care) using four-digit Census industry codes. We used unpaired two-sample t-tests to compare mean values between education requirement categories. Statistical significance was determined at $p \leq 0.001$, unless otherwise noted. More details on the methodology can be found in the Appendix.

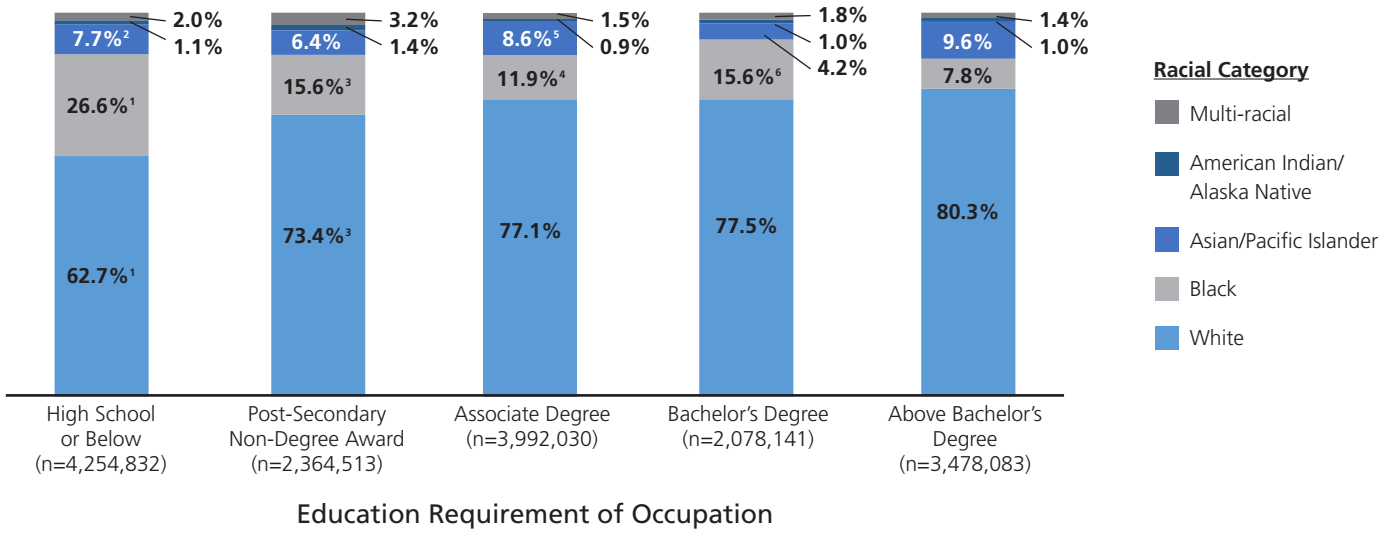
FINDINGS

INDIVIDUAL CHARACTERISTICS OF HEALTHCARE WORKERS

Of the 16,167,599 individuals employed in healthcare in 2015, 26.3% were in occupations that required a high school degree or below, 14.6% required at least some post-secondary education, 24.7% required at least an associate degree, 12.9% required at least a bachelor's degree, and 21.5% required above a bachelor's degree. Almost two-thirds of the healthcare occupations in this study required less than a bachelor's degree for entry, consistent with statistics that the majority of healthcare jobs are low- and middle-skilled.

Individuals in the top two categories of education (bachelor's degree versus above bachelor's degree) were quite similar in demographic characteristics with only significant differences in the percentage of females and percentage of those with children under age 5 in the household (Table 1). Most of the significant differences were between those with the lowest education requirements (high school or below and post-secondary non-degree award) and higher education requirements (associate degree and above). Those working in jobs requiring below an associate degree were significantly more likely to be female, younger, Hispanic/Latino, a person of color, not a U.S. citizen, living in a non-metro area, not married, working part-time, and with more health problems. The lowest education requirement category, "high school degree or below", was the category with the highest percentage of people of color (Figure 1).

Figure 1: Race of Healthcare Workers by Education Requirement of Occupation



Significant differences at $p \leq 0.001$ between: [1] high school or below versus post-secondary non-degree award, associate's, bachelor's, and above bachelor's degrees; [2] high school or below versus bachelor's degree; [3] post-secondary non-degree award versus above bachelor's degree; [4] associate's versus above bachelor's degree; [5] associate's versus bachelor's degree; [6] bachelor's versus above bachelor's degree

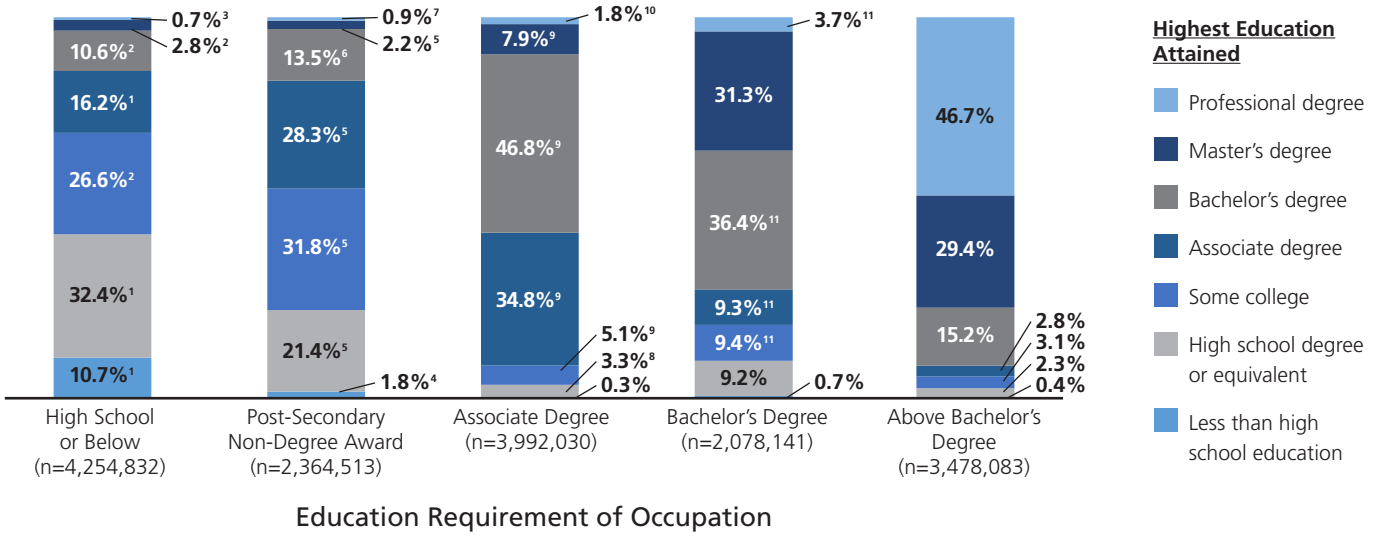
Note: Significant differences between percentages of each racial category conducted using unpaired two sample t-test

Source: Author calculation of data extracted from Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 4.0. [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

EDUCATIONAL ATTAINMENT OF HEALTHCARE WORKERS

Not surprisingly, individuals who attained higher education were significantly more likely to be working in occupations with a higher education requirement (Figure 2). Across the education requirement categories, there were individuals with more education than required for their occupation, as well as less education than required. For example, about 56.9% of individuals in an occupation requiring a high school degree or below attained more than a high school degree (although we do not know if this degree was in a health professional program or not). This pattern suggests a potential skill mismatch or lack of opportunities for career growth.

Figure 2: Highest Degree Attained among Healthcare Workers by Education Requirement of Occupation



Significant differences at p≤0.001 between: [1] high school or below versus post-secondary non-degree award, associate's, bachelor's, and above bachelor's degrees; [2] high school or below versus associate's, bachelor's, and above bachelor's degrees; [3] high school or below versus bachelor's and above bachelor's degrees; [4] post-secondary non-degree award versus associate's; [5] post-secondary non-degree award versus associate's, bachelor's, and above bachelor's degrees; [6] post-secondary non-degree award associate's and bachelor's degrees; [7] post-secondary non-degree award versus bachelor's and above bachelor's degrees; [8] associate's versus bachelor's degrees; [9] associate's versus bachelor's and above bachelor's degrees; [10] associate's versus above bachelor's degrees; [11] bachelor's versus above bachelor's degrees

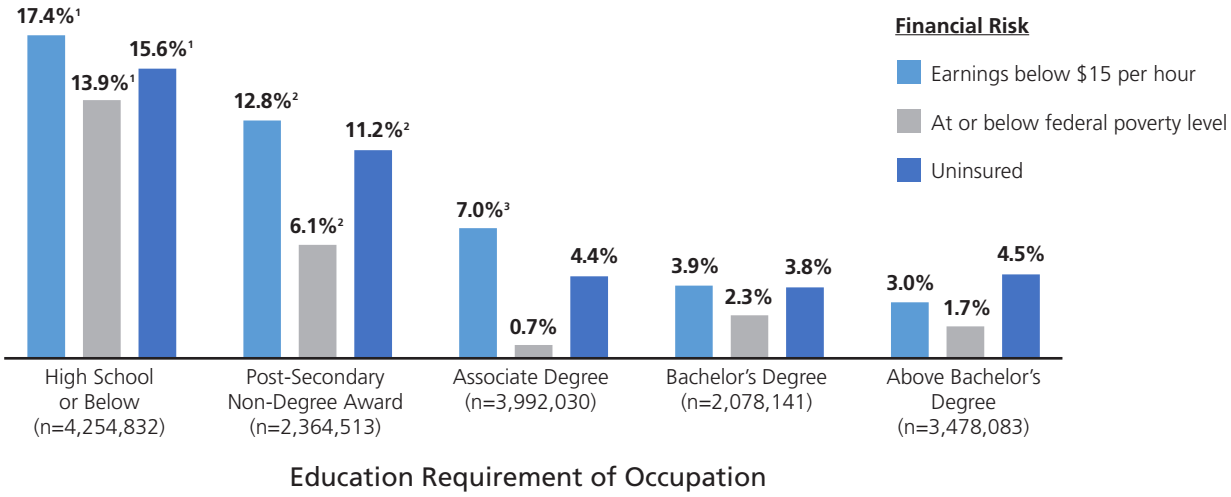
Note: Significant differences between percentages of each education category conducted using unpaired two sample t-test

Source: Author calculation of data extracted from Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 4.0. [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

FINANCIAL WELL-BEING OF HEALTHCARE WORKERS

Across our three financial risk measures, a significantly higher percentage of healthcare workers employed in occupations requiring less than an associate degree faced higher financial risk (i.e., low hourly wage, at or below poverty, and/or lack of health insurance) relative to occupations with higher education requirements, with a general pattern for the financial risk to be lower as the occupation's education requirement was higher (Figure 3). Similarly, a significantly higher percentage of individuals in occupations requiring less than an associate degree relied on state/federal assistance programs, most commonly the Earned Income Tax Credit (Figure 4). Across all financial well-being metrics, of concern is the nearly four-fold difference in financial risk and state/federal assistance rates between those in the lowest (less than associate degree)- versus highest-skilled (associate degree or above) occupations.

Figure 3: Percentage of Healthcare Workers at Financial Risk by Education Requirement of Occupation

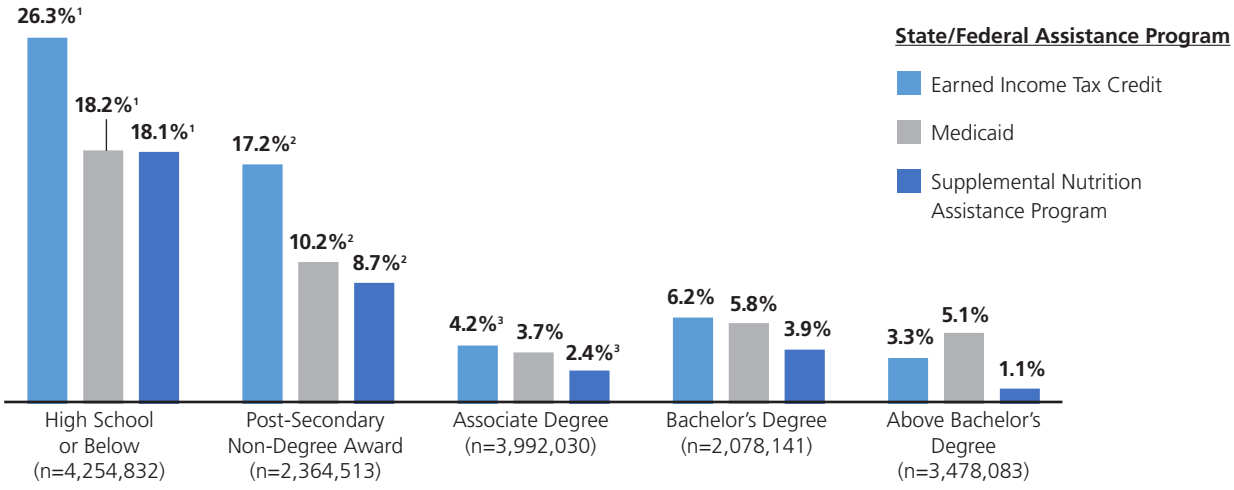


Significant differences at p≤0.001 between: [1] high school or below versus post-secondary non-degree award, associate's, bachelor's, and above bachelor's degrees; [2] post-secondary non-degree award versus associate's, bachelor's, and above bachelor's degrees; [3] associate's versus bachelor's and above achelor's degrees

Note: Financial risk defined as individuals earning below $15 per hour, being at or below the poverty level, or being uninsured. Significant differences between percentages of each financial risk category conducted using unpaired two sample t-test

Source: Author calculation of data extracted from Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 4.0. [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

Figure 4: Percentage of Healthcare Workers Relying on State/Federal Assistance Programs by Education Requirement of Occupation



Significant differences at p≤0.001 between: [1] high school or below versus post-secondary non-degree award, associate's, bachelor's, and above bachelor's degrees; [2] post-secondary non-degree award versus associate's, bachelor's, and above bachelor's degrees; [3] bachelor's versus above bachelor's degrees

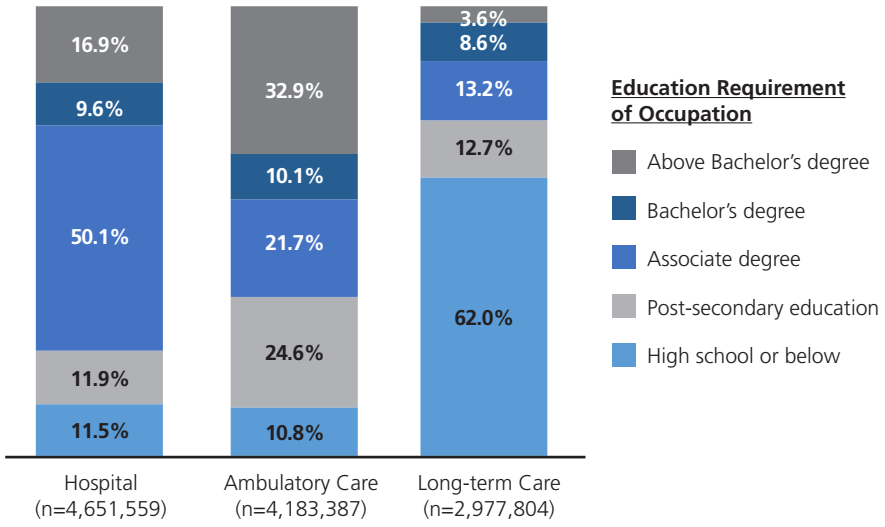
Note: Significant differences between percentages of each assistance program type conducted using unpaired two sample t-test

Source: Author calculation of data extracted from Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 4.0. [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

FINANCIAL WELL-BEING OF HEALTHCARE WORKERS ACROSS HEALTHCARE SETTINGS

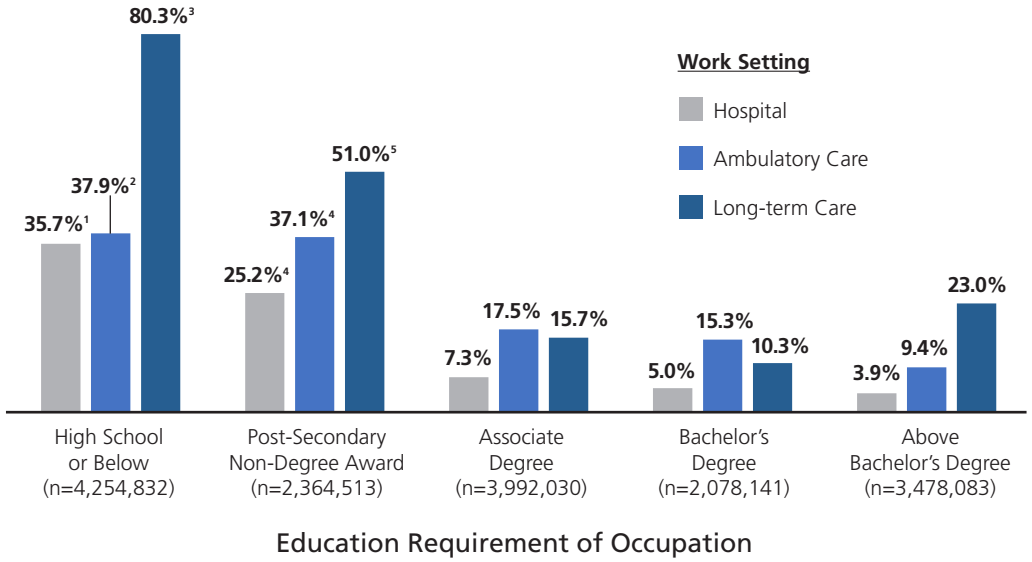
Each healthcare setting had a different mix of occupations (Figure 5). About half of the workers in hospitals were in occupations that required at least an associate degree, compared with 43.0% of workers in ambulatory care who were in occupations that required a bachelor's degree or above. On the other end of the spectrum, two-thirds of individuals in long-term care were in occupations requiring a high school degree or below. Given the high percentage of long-term care workers in occupations requiring a high school degree or below, it was not surprising that these workers also had higher rates of financial risk and state/federal assistance (Figure 6). Notably, 80% of long-term care workers in occupations requiring a high school degree or below, and 50% of those in occupations requiring no higher than a post-secondary non-degree award participated in one or more state/federal assistance programs (i.e., Earned Income Tax Credit, Supplemental Nutrition Assistance Program, or Medicaid). In other settings, the rate was lower for these education categories, though the rates were still high: a quarter to a third of workers in hospitals and ambulatory care relied on at least one of these three state/federal assistance programs.

Figure 5: Education Requirement of Healthcare Workers' Occupations by Work Setting



Source: Author calculation of data extracted from Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 4.0. [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

Figure 6: Percentage of Healthcare Workers Relying on One or More State/ Federal Assistance Programs by Education Requirement and Work Setting



Significant differences at p≤0.001 between: [1] high school or below versus associate's and above bachelor's degrees; [2] high school or below versus associate's, bachelor's, and above bachelor's degrees; [3] high school or below versus post-secondary non-degree award, associate's, bachelor's, and above bachelor's degrees; [4] post-secondary non-degree award versus associate's, bachelor's, and above bachelor's degrees; [5] post-secondary non-degree award versus associate's and bachelor's degrees

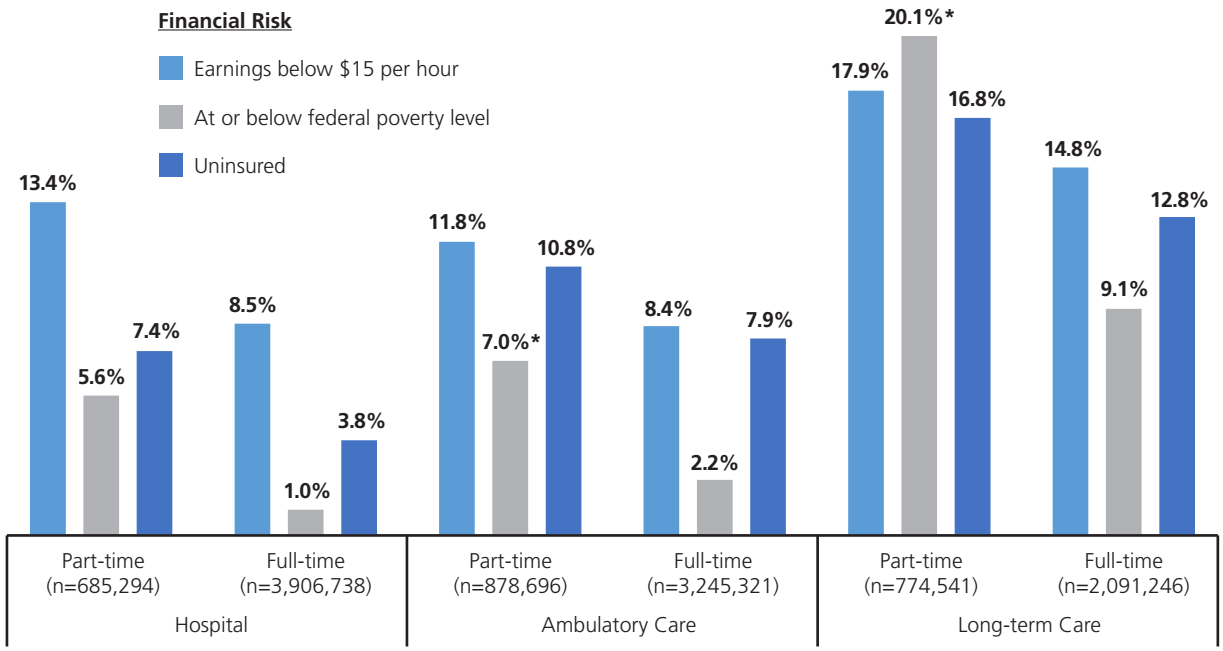
Note: Social Assistance Programs include Medicaid, Supplemental Nutrition Assistance Program, and Earned Income Tax Credit

Source: Author calculation of data extracted from Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 4.0. [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

FINANCIAL WELL-BEING OF PART-TIME VERSUS FULL-TIME HEALTHCARE WORKERS

We took a closer look at individuals working part-time versus full-time given the possibility that part-time workers may receive fewer employment benefits. Part-time workers in ambulatory and long-term care occupations requiring a bachelor's degree or below were significantly more likely than full-time workers to be at or below the federal poverty level (Figure 7). Part-time workers in ambulatory and long-term care occupations requiring a bachelor's degree or below were also significantly more likely than full-time workers to rely on state/federal assistance programs (Figure 8). There were no significant differences between part-time and full-time workers in hospital settings for any of the financial well-being metrics.

Figure 7: Percentage of Part- versus Full-Time Healthcare Workers at Financial Risk among Those Employed in Occupations Requiring Bachelor's Degree or Below by Work Setting

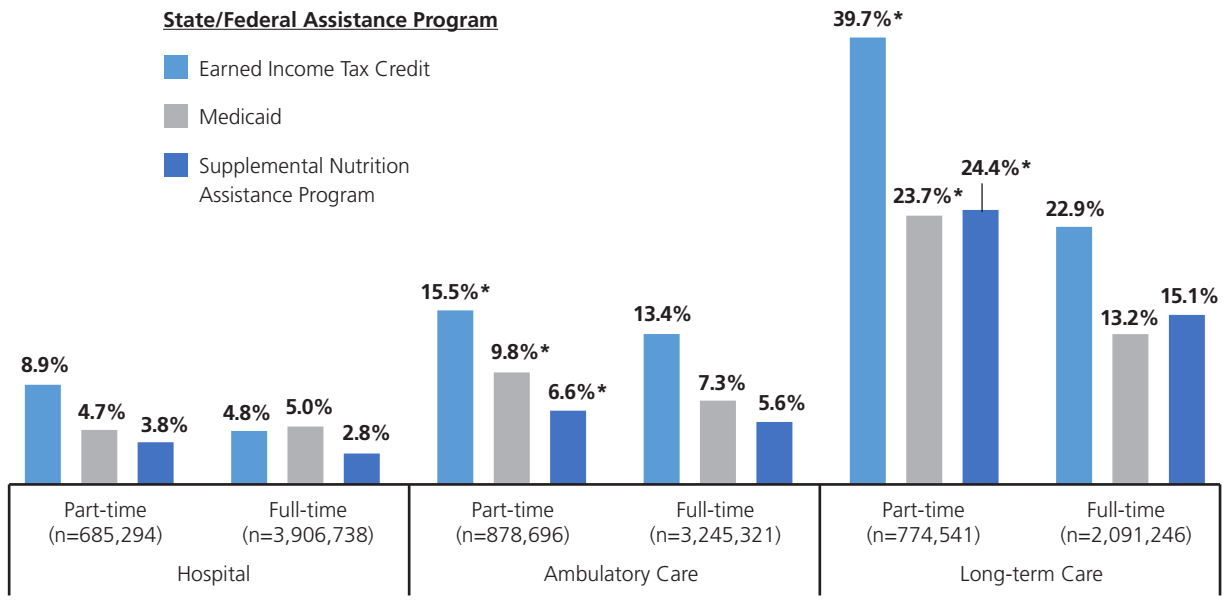


*Significant differences at p≤0.001 between part-time versus full-time by financial risk category conducted using unpaired two sample t-test

Note: Financial risk defined as individuals earning below $15 per hour, being at or below the poverty level, or being uninsured

Source: Author calculation of data extracted from Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 4.0. [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

Figure 8: Percentage of Part- versus Full-Time Workers Relying on State/Federal Assistance Programs among Those Employed in Occupations Requiring Bachelor's Degree or Below by Work Setting



*Significant differences at p≤0.001 between part-time versus full-time by financial risk category conducted using unpaired two sample t-test

Source: Author calculation of data extracted from Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 4.0. [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

CONCLUSION

Generally, individuals working in low-skilled healthcare occupations, or occupations with entry requirements less than an associate degree, appear to have the lowest socioeconomic well-being. Those in occupations requiring less than an associate degree tended to be young, Hispanic/Latino, people of color, not a U.S. citizen, not married, facing health problems, and living in non-metro areas. We also found that these same categories of healthcare workers faced significantly higher financial risk and had higher reliance on state/federal programs than workers in occupations with higher education. This pattern was consistent across healthcare settings, but was most pronounced among those in long-term care where more direct workers in jobs requiring only a high school degree or below were employed than in other settings. Also, part-time workers faced higher financial risk and had higher reliance on state/federal assistance programs than full-time workers among those working in occupations requiring a bachelor's degree or less.

There are a few limitations to this work. First, aggregating groups of occupations was a challenge given the range of education requirements in categories such as "therapists, all other" and "diagnostic related technologists and technicians." We assigned these aggregated occupation groups based on the occupation within the group that had the lowest education requirement for entry. The potential bias in grouping more highly educated individuals with less educated individuals is that the financial well-being of lower skilled groupings may appear better than it truly is, thus understating their level of vulnerability. Second, CPS data do not provide information on how workers entered their jobs and their roles, which may explain why some worked in jobs with lower education requirements than the education that they attained. For example, for professions that have raised their entry-level education requirements, individuals who were already in the profession were likely "grandfathered in" with their credentials earned at the lower education level. Also, there are individuals who switched career paths and held a higher degree for their initial career, but do not need that degree to enter the current health occupation (e.g., an individual trained as a lawyer but who now works as an associate degree registered nurse).

Third, CPS data are cross-sectional, so we do not know the long-term implications of the financial risks we observed. Future work should examine how financial well-being impacts these individuals' movement in and out of these occupations over time and whether workers are retained in healthcare or not.

Workforce planners and policymakers who advocate for healthcare as a promising industry with growing job opportunities need to ensure that those entering these occupations have a viable career path. Recent studies suggest that many low-skilled healthcare workers, especially in long-term care, did not experience upward job mobility; rather, after holding these jobs, they were not able to find employment or left the labor force entirely.[17,18] Given the high cost of turnover, retention strategies are important to employers. Key strategies include professional development, mentorship, and educational support that lead toward upward career mobility.[19] These efforts are particularly important for workers who have attained a higher level of education than their job requires, and who may face job dissatisfaction without support to progress in their careers.

Employers wanting to reduce turnover for their workers in low-skilled occupations should find ways to address financial risks and workers' reliance on state/federal assistance programs. A recent study found that low-skilled workers were more likely to stay with their employers if they were satisfied with their financial compensation (i.e., wages and benefits) rather than if they were satisfied with their work.[20] Given the high percentage of workers in low-skilled occupations relying on Supplemental Nutrition Assistance Program, hospitals and large ambulatory care centers with cafeterias or other food service may, for example, consider starting or enhancing programs to subsidize food for their employees. Healthcare employers should also ensure that they are providing health insurance coverage for all employees, particularly part-time employees in low-skilled occupations, given the health mission of these organizations. Health system performance is moving from the "triple aim" goals of enhancing patient experience, improving population health, and reducing costs, to adding a fourth aim of "improving the work life of healthcare providers."[21] Employers will likely benefit from ensuring the fourth aim applies to all of their employees, including those in low-skilled occupations, who are often on the front line of care delivery.

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University of Washington • School of Medicine
Box 354982 • Seattle WA 98195-4982
phone: (206) 685-0402 • fax: (206) 616-4768
http://depts.washington.edu/uwchws/

APPENDIX: DETAILED METHODS

We used the 2015 Annual Social and Economic Supplement ("March Supplement") of the Current Population Survey (CPS).[14-] The CPS is an ongoing monthly household survey of approximately 100,000 households, or 200,000 individuals, conducted by the U.S. Bureau of Labor Statistics (BLS) and the U.S. Census Bureau. The CPS collects self-reported data on household and individual demographics and socioeconomic status. The March Supplement is a well-recognized source to examine job transitions because respondents self-report both their current industry of employment, as well as their industry of employment in the prior year. We restricted our analysis to respondents age 18 to 75. We used survey weights to generalize the results to the civilian non-institutionalized U.S. adult population. We focused on respondents who were employed at the time of the survey, and excluded those who were unemployed or out of the labor force (defined as those not actively seeking work and excluding, for example, those on active duty, in school, retired, or living in institutions such as a prison).

Occupations were defined by the four-digit 2010 Census occupation codes used by CPS, which crosswalk with more commonly known Standard Occupational Classification (SOC) System. We used the most disaggregated level of occupation description provided in CPS for the following two major occupation categories: "Healthcare Practitioners and Technical Occupations" and "Healthcare Support Occupations." Because these two categories do not include all allied healthcare occupations, we also included a select number of additional occupations that could deliver direct patient care. We categorized these occupations into five education requirement categories as seen in Appendix Table 1. Occupations were assigned based on the minimum entry-level education requirement. For aggregated occupation titles such as "therapists, all other" and "diagnostic related technologists and technicians," we assigned these based on the occupation within the group that had the lowest education requirement.

We defined the three broad sectors of the healthcare industry using four-digit 2010 Census industry codes, which align with the North American Industry Classification System:

1. "Hospital" is defined as Census Code #8190;
2. "Ambulatory Care" is defined as Census Codes #7970 Office of physicians; #7980 Office of dentists; #7990 Office of chiropractors; #8070 Office of optometrists; #8080 Offices of other health practitioners; #8090 Outpatient care centers; and #8180 Other healthcare services;
3. "Long-term Care" is defined as Census Codes #8170 Home health care; #8270 Nursing care facilities; and #8290 Residential care facilities without nursing.

Not all healthcare workers are employed in one of these three settings, but rather work in other industries such as retail (e.g., pharmacies) or education (e.g., school nurses).

We investigated several markers of financial risk and well-being including poverty status, health insurance status (i.e., uninsured and Medicaid), Earned Income Tax Credit (a tax benefit for working individuals with low to moderate income), Supplemental Nutrition Assistance Program (commonly referred to as food stamps), Supplemental Security Income (SSI), and Temporary Assistance for Needy Families (TANF) (commonly referred to as welfare). SSI and TANF were relatively rare across education categories, though the rates tended to be highest among those in occupations requiring a high school degree or below. It was not surprising these rates were low given that SSI is for the blind, disabled and elderly who have little or no income; our sample focused on an employed sample and most likely did not qualify for SSI. The low rates of TANF receipt were also not surprising because we focused on an employed sample, which for many individuals means they no longer need to rely on welfare. We did not show these results in the main body of the text.

Appendix Table 1: Crosswalk of Four-Digit Census Occupation Title and Code by Education Requirement

Education Requirement of Occupation				
High School Degree or Below	**Post-Secondary Non-Degree Award**	**Associate Degree**	**Bachelor's Degree**	**Above Bachelor's Degree**
2025 Miscellaneous community/social services specialist including health educators and community health worker	3400 Emergency medical technicians and paramedics	3200 Radiation therapists	0350 Medical/health services managers	1820 Psychologists
3420 Health practitioner support technologists/ technicians	3500 Licensed practical and licensed vocational nurses	3220 Respiratory therapists	0420 Social/community service managers	2000 Counselors
3520 Opticians, dispensing	3510 Medical records and health information technicians	3255 Registered nurses	2010 Social workers	3000 Chiropractors
3647 Pharmacy aides	3630 Massage therapists	3300 Clinical laboratory technologists and technicians	3030 Dietitians/nutritionists	3010 Dentists
3648 Veterinary assistants/ laboratory animal caretakers	3640 Dental assistants	3310 Dental hygienists	3210 Recreational therapists	3040 Optometrists
3600 Nursing/psychiatric/ and home health aides	3645 Medical assistants	3320 Diagnostic technicians/technologists	3235 Exercise physiologists	3050 Pharmacists
3610 Occupational therapist assistants/aides	3646 Medical transcriptionists	3535 Miscellaneous health technologists/technicians	3245 Therapists, all other	3060 Physicians and surgeons
3620 Physical therapist assistants/aides	3649 Phlebotomists		3540 Other healthcare practitioners and technical occupations	3110 Physician assistants
4610 Personal/home care aides	3655 Miscellaneous healthcare support occupations, including medical equipment preparers			3120 Podiatrists
8760 Medical/dental/ ophthalmic laboratory technicians				3140 Audiologists
				3150 Occupational therapists
				3160 Physical therapists
				3230 Speech-language pathologists
				3250 Veterinarians
				3256 Nurse anesthetists
				3257 Nurse midwives
				3258 Nurse practitioner
				3260 Health diagnosing and treating practitioners, all other