

Mental and Physical Health Status of U.S. Health Care Workers

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Arati Dahal, PhD, Bianca K. Frogner, PhD

KEY FINDINGS

This study is a cross-sectional analysis of the 2017 wave of the Panel Study of Income Dynamics (PSID), which is part of a longitudinal survey of the general US population. Individuals aged 18 years or older that were employed or were actively looking for a job categorized by whether they worked in health care or not were included in the study. We examined the prevalence of self-reported mental and physical health conditions such as cardiovascular diseases, cancer and respiratory illnesses among health care professionals compared to all other employed individuals in the US. We compared health status across health care occupations and three health care settings: hospitals, ambulatory care, and long-term care. Using multivariate regressions, we examined the risk factors associated with health conditions among health care providers by occupation and work setting. Survey weights were applied to generalize results to the national population. The following were key study findings:

- Our sample included 10,375,357 health care workers and 104,999,133 non-health care workers.
- Health care workers compared to workers in other industries were slightly younger (41.7 vs 42.4), fewer were female (76.3% vs. 79.2%) and more likely to have a bachelor's degree or higher (60.7% vs. 48.1%).
- Compared to workers in other industries, health care workers had a higher prevalence of any mental illness (14.6% vs. 9.6%), especially depression (8.0% vs. 4.9%) and anxiety (2.9% vs. 1.9%).
- Health care workers also had a higher prevalence of some physical health conditions such as other chronic illnesses (19.2% vs. 12.3%) and cancer (4.6% vs. 4.2%) compared to other workers.
- Among health care workers, the prevalence of 3 or more chronic illnesses was highest among those who worked in long-term care (36.9% compared to 34.9% for the overall health care group).

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- Multivariate regression analysis showed that long-term care workers had a higher prevalence of cardiovascular diseases, diabetes, and cancer, while ambulatory care workers had higher prevalence of respiratory illnesses and hospital workers had higher prevalence of having arthritis. These prevalences were not statistically significant across settings, however.
- No consistent pattern or significant differences were found in the adjusted probabilities of the prevalence of physical health conditions by occupation other than physicians generally having the lowest probability of having any physical health condition except for cancer where they had the highest probability. Licensed practical nurses/licensed vocational nurses followed by aides/assistants had the highest probability of having any mental illness, including depression, compared to other occupations, though the differences were not statistically significant.

Health care workers generally reported worse mental health and more comorbidities than non-health care workers, though the prevalences of physical health conditions were similar. It should be noted that given the survey relies on self-report, mental health conditions may be particularly underreported due to stigma associated with them. Nonetheless, findings from this study provide important baseline information about the prevalence of illnesses in health care workers in the pre-COVID era. Ongoing follow-up will be crucial in informing policymakers on the most prevalent mental and physical health conditions to help develop policies targeting the most at-risk health care workers.

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INTRODUCTION

Burnout has been an ongoing concern among health care workers, which can contribute to developing mental and physical health conditions.^{1,2} The COVID-19 pandemic added to this concern by requiring health care workers to balance long hours and heavy workload, and care for patients dying at higher than usual rates, which have all contributed to a rise of common mental health conditions such as anxiety and depression among health care workers.^{3,4} Even before the pandemic, health care workers were already exposed to non-traditional work hours such as night shifts, emergency work calls, and long hours at work.^{5,6} These factors have a strong association with sleep disorders and fatigue, which can also contribute to developing a mental health condition.⁶⁻⁸ However, data on the prevalence of mental and physical health conditions among health care workers, and how it compares to the rest of society, is relatively unknown.

Health problems are a major concern for both health care workers and patients. For health care workers, health problems can reduce the probability of obtaining employment, negatively affect productivity, and result in long-term absences from the workplace.^{9,10} Research shows that individuals with any health disorders experience a loss of productivity, resulting in high turnover rates in the labor market, which in turn could be expensive for medical institutions who face high hiring and training costs with the loss of workers.¹¹ Because health care workers are at the forefront of providing treatment and services to patients, un/underdiagnosed or un/undertreated illnesses among the health care workers could compromise the type of care they provide. Poor mental health is associated with a higher likelihood of making medical errors, which can have detrimental effects on patients' health.^{12,13} Also, having any kind of mental illness is associated with a decreased performance in providing care to patients.¹⁴

Chronic health problems are increasingly common among working individuals generally.¹⁵ Work-related stress is a risk factor for many diseases.¹⁶ When individuals develop one disease, it may be more common to develop two or more diseases, which can lead to multimorbidity that affects quality of life, ability to work, among other impacts.¹⁷ For health care workers, an added risk factor may be verbal abuse from disgruntled patients, which could trigger mental illnesses.¹⁸ A systematic review of studies on workplace violence against health care workers found frequent association with depression, anxiety, and post-traumatic stress syndrome, and signs point to increasing workplace violence due to the pandemic.^{19,20}

Previous studies investigating mental and physical health of health care workers have often focused on a specific health profession or a specific condition.^{21,22} In this study, we aim to compare health outcomes for multiple occupations across multiple settings, controlling for sociodemographic factors known to influence health, while also comparing to the US population. Specifically, we examined the prevalence of self-reported, clinically-diagnosed mental and physical health conditions, and comorbidities, across a range of health care workers, and compared the prevalence with individuals employed outside the health care sector in the US by leveraging data from a publicly available survey. Our results provide baseline information on both mental and physical health conditions experienced by health care workers pre-pandemic, which could be useful to assess the magnitude of challenges faced by these workers in the aftermath of the pandemic.

METHODS

DATA SOURCE AND STUDY POPULATION

Data for this study came from the 2017 wave of the Panel Study of Income Dynamics (PSID), a nationally representative survey conducted by the Survey Research Center at the University of Michigan.²³ The PSID is the longest-running, multi-generational household panel survey, as it has followed the same households and individuals since 1968. Data have been collected every two years since 1997, and annually prior to that time. Over the years it has also added more individuals and families into the survey to make the dataset more representative of the national population. The dataset includes information on respondents' sociodemographic, economic, and health data, among other information. Because this study used deidentified, publicly available data, it was not considered human subjects research by the University of Washington Institutional Review Board.

For this analysis, we included US adults age 18 years and older who had provided data on their current occupations. We excluded those out of the labor force (e.g., students, permanently disabled, homemakers, retired individuals) and those with missing employment status. Based on our selection criteria, our unweighted sample included 1,013 health care workers and 9,149 non-health care workers. Survey weights were applied in both descriptive and regression analyses. Our weighted sample represented 10,375,357 health care workers and 104,999,133 non-health care workers.

OUTCOMES AND COVARIATES

Our primary outcome variables constituted of a range of self-reported mental and physical health status measures. Mental health status was based on whether a respondent was ever diagnosed with emotional or psychiatric problems by a physician. In follow-up questions, those with a psychiatric problem could choose to report up to three different diagnoses of mental health conditions, such as depression, anxiety (panic), bipolar disorder (mania), schizophrenia (psychosis), phobias, alcohol abuse, drug abuse, obsessive compulsive disorder, post-traumatic stress disorder, and other types of mental health conditions. We collapsed the responses to this question to create three measures of mental health: depression, anxiety, and "other mental health conditions." We recognize, in both theory and practice, the vast differences between some of the "other" conditions such as schizophrenia and alcohol abuse, but we combined them because of the extremely small sample size within each of these conditions.

To measure physical health status, we relied on questions where respondents were asked if they were ever diagnosed by a physician with any of the following ten types of health problems: stroke, heart attack, heart diseases, hypertension, asthma, lung diseases, diabetes, arthritis, cancer, and other chronic illnesses. We combined responses on stroke, heart attack, heart disease and hypertension to create a variable called "cardiovascular disease", and asthma and lung disease to create a variable denoting "respiratory illnesses," thus creating six physical health categories. We also included respondents' Body Mass Index (BMI), which was calculated based on self-reported height and weight.

In addition to looking at each condition, we included as set of count variables: total number of conditions, number of mental health conditions, and number of physical health conditions. The count of mental health conditions was limited to three, which is the maximum number of mental health conditions one can report in the PSID. The count of physical health conditions was based on a count of the ten conditions listed above.

Based on an approach from a previous study²⁴ and accounting for small sample sizes for some occupations, we created six health care occupation categories based on similarities in education levels and/or roles: 1) aides/assistants (reference category), 2) licensed practical nurses/licensed vocational nurses (LPN/LVNs), 3) nurses (including RNs and advanced practice RNs), 4) technicians, 5) therapists/other advanced providers, 6) physicians/other doctorates (see **Table A-1** in the **Appendix** for a detailed list). Aides/assistants were the chosen reference group based on the assumption that their generally lower education and income may be associated with worse health outcomes than other occupations. We categorized individuals working in one of these six health

care occupation categories as health care workers, and everyone else was considered not a health care worker. A limitation of doing so is that some classified as non-health care workers may in fact work in the health care industry (e.g., practice manager, medical coder).

Based on 2012 Census codes for industry, we created three work settings for health care workers: hospitals (reference category), ambulatory care (i.e., offices of physicians, offices of dentists, offices of chiropractors, offices of optometrists, offices of other health practitioners, outpatient care centers and other health care services), and long-term care (i.e., home health services, nursing care facilities including skilled nursing facilities, and residential care facilities). We reported predicted probabilities of health outcomes by setting and occupation.

We also analyzed and included self-reported sociodemographic and employment measures including sex (female/male), age (continuous), race (White, Black, Asian, American Indian/Alaska Native, Native Hawaiian or Pacific Islander, and other), ethnicity (Hispanic/not Hispanic), marital status (married, single, widowed/divorced/separated), number of children (continuous), educational level (bachelor's degree or higher), four major geographic locations (Northeast, Midwest, South, West), metropolitan residence status, home ownership status, health insurance status, weekly work hours, and annual individual wages.

STATISTICAL ANALYSIS

We conducted descriptive univariate and bivariate analyses of health outcomes, comparing health care workers with individuals employed in other industries. Among health care workers, we performed logistic regressions to identify the predictors for each of the three mental health and six physical health outcomes and zero-inflated Poisson regressions to measure probabilities of counts of physical and mental health comorbidities. All regressions included controls for sociodemographic characteristics, occupation group, and work setting. We included BMI as a control variable, given that BMI is a well-known risk factor of chronic conditions.²⁵ All data analyses were performed using Stata version 16.0.²⁶ Results reported are from the weighted sample.

RESULTS

DEMOGRAPHIC CHARACTERISTICS

Table 1 shows that health care workers compared to non-health care workers were more likely to be younger (42.4 years old vs. 44.3 years old), identify as female (79.2% vs. 43.5%), be unmarried (24.2% vs. 22.4%), and hold a bachelor's degree or higher (48.1% vs. 38.6%). In terms of race and ethnicity, a slightly lower percentage of health care workers were White (73.0% vs. 77.1%) and Hispanic (10.8% vs. 15.6%), while a higher percentage of health care workers were Black (14.4% vs. 10.0%) compared with non-health care workers. Individuals reporting their race as Asian or "Other" race were comparable between the two groups. Homeownership rate was slightly lower for health care workers compared with non-health care workers (59.0% vs. 61.3%), while health insurance status and average weekly work hours were comparable between the two groups. Annual wages were higher for health care workers compared to non-health care workers (\$58,304 vs. \$54,566). All other measures were similar between the two groups.

Among health care workers, long-term care workers compared to those working in hospitals and ambulatory care settings, were slightly older, more likely to be female, and unmarried. In terms of racial diversity, 25.5% of long-term care workers were Black and 9.7% reported an "Other" race, the highest among all settings. Only 43.6% of long-term care workers owned homes, compared to 63.7% and 65.7% for hospital and ambulatory care workers, respectively. Around 15.0% of long-term workers did not have any health insurance, compared to 1.0% for hospital workers and 3.7% for ambulatory care workers. On average, long-term care workers reported lower annual wages of \$37,386 compared to \$76,183 for hospital and \$61,443 for ambulatory care workers. All other measures were similar among the three groups.

Table 1: Demographic Characteristics of Non-Health Care Worker versus Health Care Workers by Setting, 2017

	Non-Health Care Workers	Health Care Workers			
		All	Hospitals	Ambulatory Care	Long-term Care
N	104,999,133	10,375,357	3,969,721	2,991,690	2,583,077
Age (years, mean)	42.4	41.7	42.4	42.9	42.4
Female	79.2%	76.3%	79.8%	86.9%	79.2%
Marital status					
Married	57.6%	58.0%	60.3%	46.8%	57.6%
Single	24.2%	26.8%	19.6%	28.1%	24.2%
Divorced/Separated/Widowed	18.2%	15.1%	20.1%	25.1%	18.2%
Any children (yes=1)	81.4%	82.4%	71.4%	94.1%	81.4%
Bachelor's or higher degree	48.1%	60.7%	51.3%	24.1%	48.1%
Homeownership status	59.0%	63.7%	65.7%	43.6%	59.0%
Without health insurance	5.0%	1.0%	3.7%	13.4%	5.0%
Weekly work hours (mean)	40.0	41.5	39.4	40.7	40.0
Annual wages (mean)	\$58,304.0	\$76,183.0	\$61,443.0	\$37,386.0	\$58,304.0
Live in a metro area	84.1%	82.3%	87.0%	80.5%	84.1%
U.S. Regions					
Northeast	19.3%	17.4%	22.5%	22.2%	19.3%
Midwest*	28.2%	34.2%	20.8%	29.8%	28.2%
South	32.2%	25.9%	36.2%	31.8%	32.2%
West**	20.3%	22.5%	20.5%	16.2%	20.3%
Hispanic	10.8%	5.8%	11.4%	13.0%	10.8%
Race					
White	73.0%	72.5%	80.9%	60.4%	73.0%
Black	14.4%	12.9%	11.0%	25.5%	14.4%
Asian	6.2%	10.3%	4.0%	4.0%	6.2%
Other races***	5.8%	3.3%	3.7%	9.7%	5.8%

*In the PSID, Midwest region is labeled as North Central.

**West includes all the states listed in the PSID plus Alaska and Hawaii, as consistent with the U.S. Census regions.

***Other races include American Indian/Alaska Native, Native Hawaiian or Pacific Islander, and other.

PREVALENCE OF HEALTH CONDITIONS AMONG HEALTH CARE WORKERS VERSUS NON-HEALTH CARE WORKERS

The prevalence rates of the six physical health conditions examined were comparable between health care and non-health care workers, but mental health conditions (14.6% vs. 9.6%), and especially depression (8.0% vs. 4.9%), were higher among health care workers compared to non-health care workers; other chronic physical health conditions (19.2% vs. 12.3%) were also higher among health care workers (Table 2). Health care workers were more likely to have three or more conditions of any type compared to non-health care workers (10.4% vs 8.3%). The average BMI was similar for both groups.

Table 2: Health-related Characteristics of Non-Health Care Workers and Health Care Workers by Setting, 2017

	Non-Health Care Workers	Health Care Workers			
		All	Hospitals	Ambulatory Care	Long-term Care
N	104,999,133	10,375,357	3,969,721	2,991,690	2,583,077
Physical health conditions					
Cardiovascular diseases	27.8%	24.4%	21.4%	19.3%	29.1%
Respiratory illnesses	12.9%	13.1%	12.0%	18.7%	8.8%
Diabetes	8.6%	6.7%	6.0%	4.9%	12.3%
Arthritis	12.0%	12.4%	13.0%	11.4%	13.2%
Cancer	4.2%	4.6%	2.4%	7.4%	4.7%
Other chronic illnesses	12.3%	19.2%	21.0%	15.9%	17.5%
Mental illnesses	9.6%	14.6%	10.8%	12.8%	17.0%
Depression	4.9%	8.0%	7.4%	7.4%	9.7%
Anxiety	1.9%	2.9%	2.1%	4.3%	0.9%
Other psychiatric conditions	2.1%	1.2%	0.1%	0.8%	1.2%
Body mass index (BMI)	28.5	28.6	27.9	27.0	31.0
Disease index					
1-2 diseases	40.3%	34.9%	31.2%	36.9%	34.4%
≥3 diseases	8.3%	10.4%	9.6%	8.8%	12.5%

Note: Cardiovascular diseases include stroke, heart attack, heart diseases, and hypertension. Respiratory illnesses include asthma and lung disease.

PREVALENCE OF HEALTH CONDITIONS AMONG HEALTH CARE WORKERS BY SETTING AND OCCUPATION

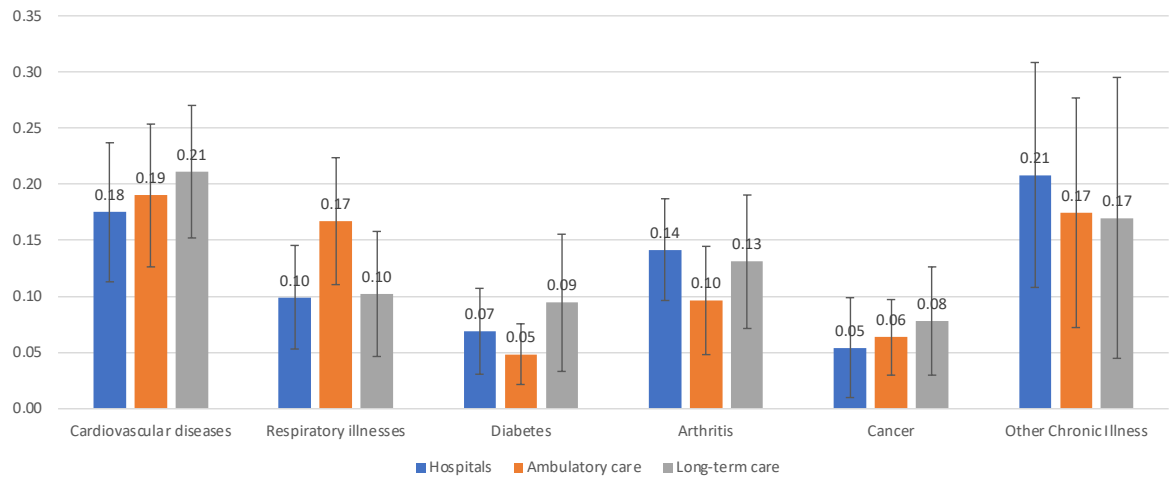
Among health care workers, on average, those working in long-term care were the sickest, compared to health care workers in hospitals and ambulatory care settings (Table 2). Higher percentages of long-term care workers reported being diagnosed with cardiovascular diseases, arthritis, diabetes, and mental health conditions, compared to those working in hospitals and ambulatory care settings. However, the prevalence rates of respiratory diseases, cancer, and anxiety were higher among ambulatory care workers. Those in long-term care settings had an average BMI of 31.0, the highest among all the groups. Long-term care workers also had the highest number of comorbidities, as 12.5% had three or more conditions.

Health-related characteristics were also examined among specific health care occupations (full details by occupations available upon request). LPNs/LVNs, on average, had the worst health outcomes, as 26.8% of LPNs/LVNs reported having three or more conditions compared with 10.4% for the overall health care group. Higher proportions of LPNs/LVNs also had mental health conditions, particularly, depression (27.6% vs. 8.0% for the health care group) and had the highest average BMI of 36.0, compared with a BMI average of 28.6 for the health care sample. Aides/assistants were another group of occupations that had some of the worst health outcomes. Compared to the overall health care group, aides/assistants had higher rates of respiratory illnesses (17.2% vs. 13.1%), cancer (6.4% vs. 4.6%) and other chronic illnesses (20.3% vs. 19.2%).

RISK FACTORS OF MENTAL AND PHYSICAL HEALTH CONDITIONS

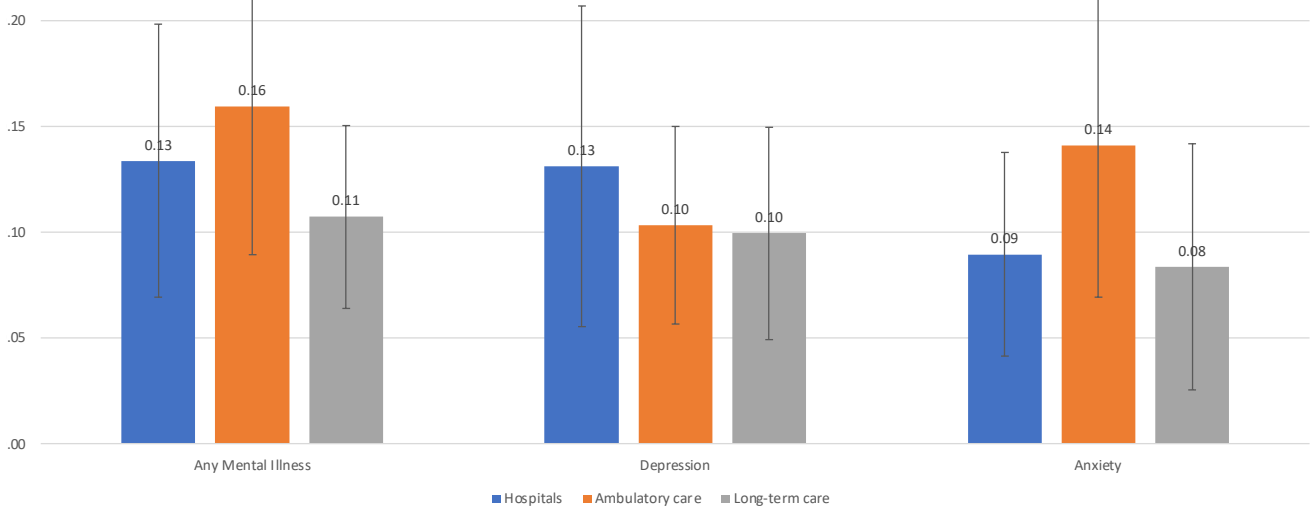
After adjusting for multiple sociodemographic factors, long-term care workers had higher probability of reporting a cardiovascular condition, diabetes, and cancer, while ambulatory care workers had higher probability of reporting respiratory illness and hospital workers had higher probability of reporting arthritis (Figure 1). However, these probabilities were not statistically significant across settings. Long-term care workers had the lowest probability of reporting mental illness across settings with hospital workers having higher probability of depression and ambulatory care workers having higher probability of any mental illness, including anxiety, though the differences were not significant across settings (Figure 2).

Figure 1. Adjusted Probabilities of Reporting Physical Health Conditions by Setting



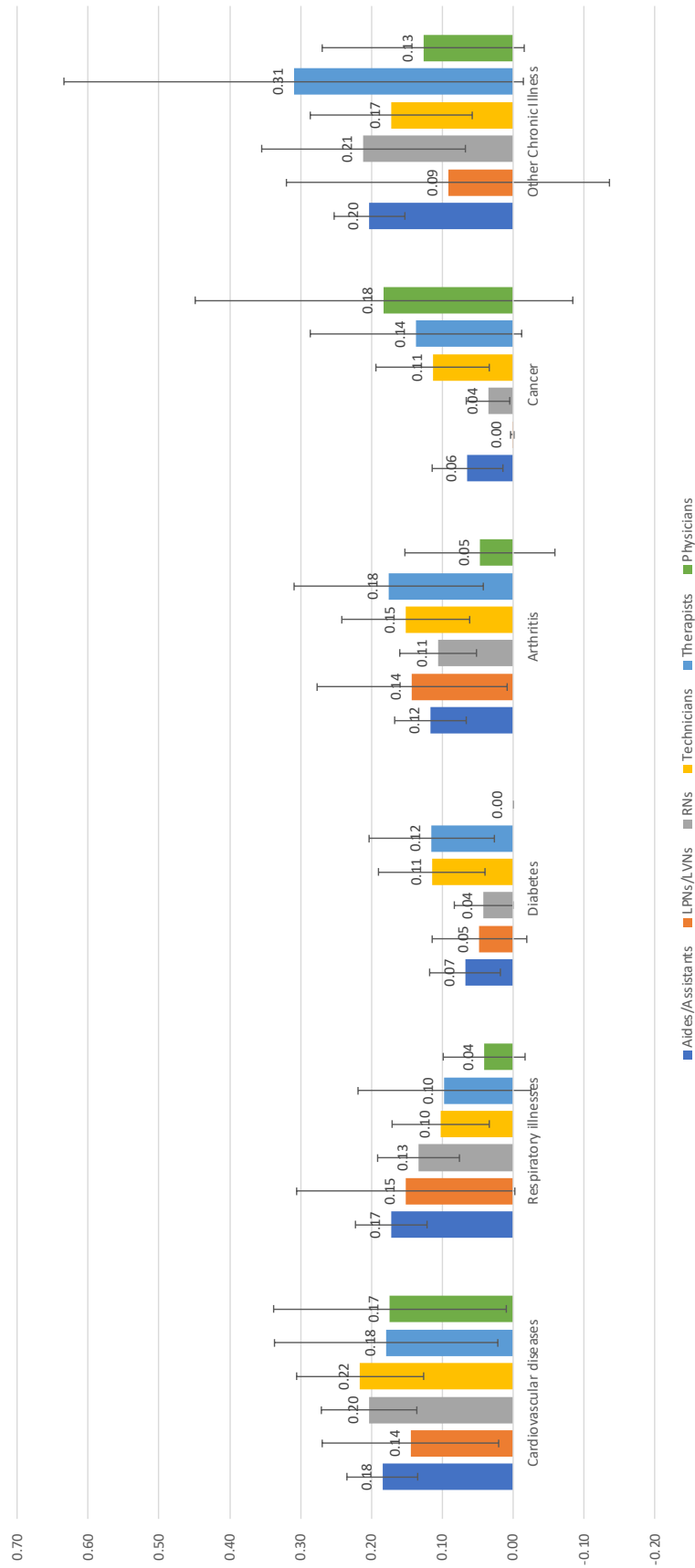
Note: Cardiovascular diseases include stroke, heart attack, heart diseases, and hypertension. Respiratory illnesses include asthma and lung diseases. Logistic regressions controlled for sociodemographic and other factors, including age, sex marital status, race/ethnicity, education level, homeownership status, number of children, regions, metro/non-metro residence area, health insurance status, weekly work hours, and wages.

Figure 2. Adjusted Probabilities of Reporting Mental Health Conditions by Setting



Note: Logistic regressions controlled for sociodemographic and other factors, including age, sex marital status, race/ethnicity, education level, homeownership status, number of children, regions, metro/non-metro residence area, health insurance status, weekly work hours, and wages.

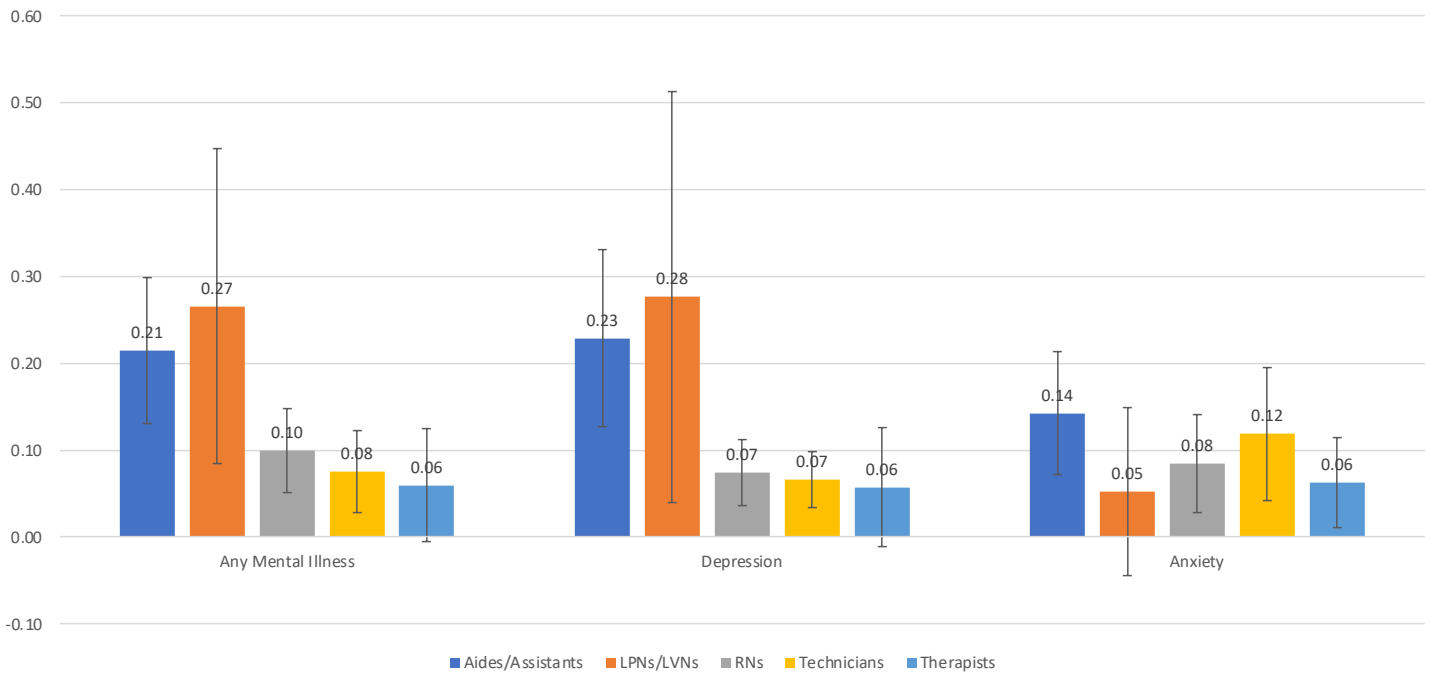
Figure 3. Adjusted Probabilities of Reporting Physical Health Conditions by Occupation



Note: LPNs/LVNs = licensed practical nurses/licensed vocational nurses; RNs = registered nurses; cardiovascular diseases include stroke, heart attack, heart diseases, and hypertension. Respiratory illnesses include asthma and lung diseases. Logistic regressions controlled for sociodemographic and other factors, including age, sex, marital status, race/ethnicity, education level, homeownership status, number of children, regions, metro/non-metro residence area, health insurance status, weekly work hours, and wages.

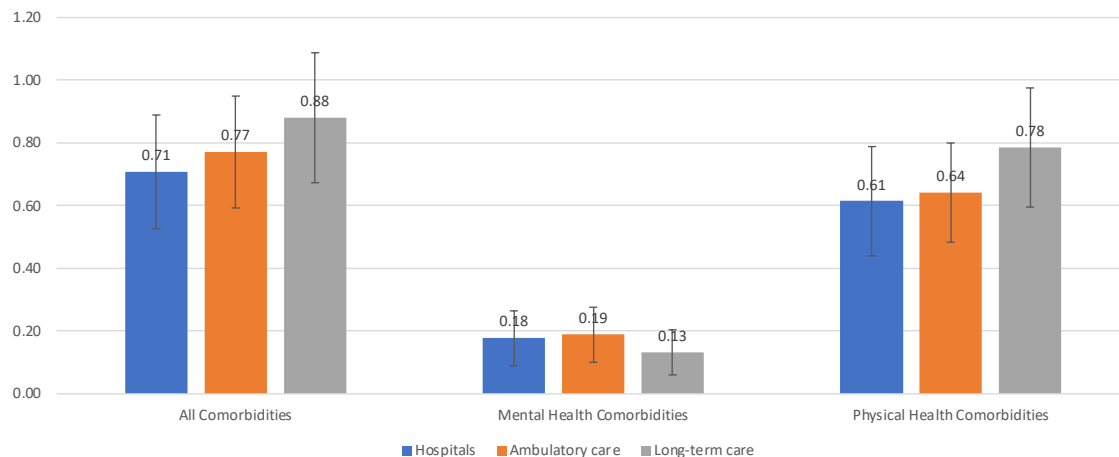
No consistent pattern or significant differences were found in the adjusted probabilities of reporting physical health conditions by occupation other than physicians generally having the lowest probability of having any physical health condition except for cancer where they had the highest probability (Figure 3). LPNs/LVNs followed by aides/assistants had the highest probability of reporting any mental illness, including depression, compared to other occupations, though the differences were not significant (Figure 4).

Figure 4. Adjusted Probabilities of Reporting Mental Health Conditions by Occupation



Note: LPNs/LVNs = licensed practical nurses/licensed vocational nurses, RNs = registered nurses; logistic regressions controlled for sociodemographic and other factors, including age, sex marital status, race/ethnicity, education level, homeownership status, number of children, regions, metro/non-metro residence area, health insurance status, weekly work hours, and wages.

Figure 5. Adjusted Count of Physical and Mental Health Comorbidities by Setting

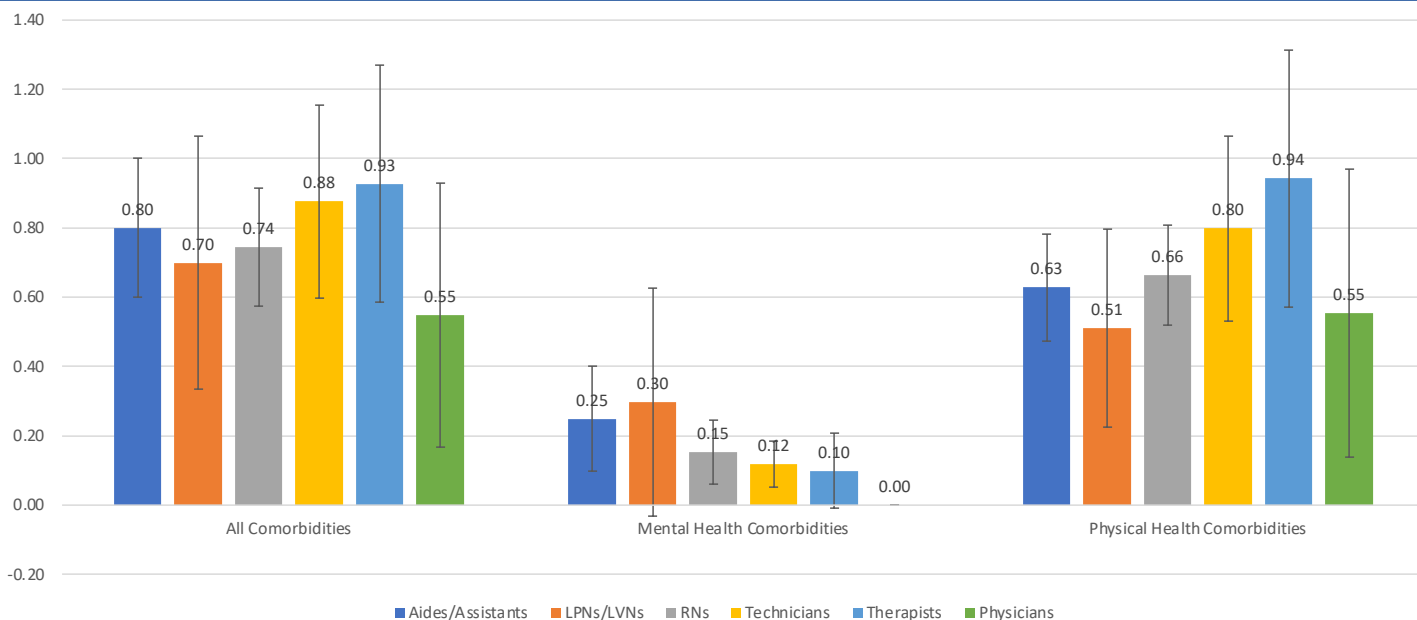


Note: Zero-inflated Poisson regressions controlled for sociodemographic and other factors, including age, sex marital status, race/ethnicity, education level, homeownership status, number of children, regions, metro/non-metro residence area, health insurance status, weekly work hours, and wages.

RISK FACTORS OF MULTI-MORBIDITY

Multivariable zero-inflated Poisson regression analysis showed that, after adjusting for sociodemographic factors, long-term care workers generally had more comorbidities of any type, generally driven by physical health comorbidities (Figure 5), though the differences were not significant. Physicians reported the fewest comorbidities of any type, in part driven by almost no mental illness reported by physicians (Figure 6). Therapists reported the highest number of comorbidities, driven mostly by physical health comorbidities. Again, these differences were not statistically significant.

Figure 6. Adjusted Count of Physical and Mental Health Comorbidities by Occupation



Note: LPNs/LVNs = licensed practical nurses/licensed vocational nurses, RNs = registered nurses; zero-inflated Poisson regressions controlled for sociodemographic and other factors, including age, sex marital status, race/ethnicity, education level, homeownership status, number of children, regions, metro/non-metro residence area, health insurance status, weekly work hours, and wages.

DISCUSSION

Health care workers generally reported worse mental health and more comorbidities than non-health care workers, though the prevalences of physical health conditions were similar. Although long-term care workers had more frequent reports of mental and physical health conditions and with more comorbidities, when controlling for sociodemographic factors such as insurance status and home ownership, health outcomes were not significantly different from workers in ambulatory care or hospital settings.

One significant difference in health outcomes by setting was for respiratory illness whereby ambulatory care workers had significantly higher odds of reporting a respiratory illness than hospital workers. One recent study found that ambulatory workers had higher occupational exposure to influenza than workers in other settings.²⁷ The literature does not provide much guidance on why ambulatory care workers may experience conditions like asthma or lung cancer at higher rates than other health care workers. Further work is needed to understand the environmental exposures such as to cleaning chemicals to which ambulatory care workers are exposed.²⁸

By occupation, the most notable finding was that aides/assistants and LPNs/LVNs had higher probability than nurses, technicians, and therapists of reporting a mental illness. Aides/assistants were more likely to have multiple mental health comorbidities compared to nurses and physicians. In the first year of the pandemic, aides/assistants reported higher stress compared to other health professions.²⁹ Continued monitoring of mental illness among aides/assistants will be important given that these occupations often face high levels of turnover, which is strongly associated with burnout.^{30,31}

Our results are consistent with prior studies finding an association between low socioeconomic status and poor health, particularly among long-term care workers.^{32,33} A concern is that long-term care jobs, mostly including aides/assistants and LPNs/LVNs are typically associated with poverty-level wages,³⁴ despite their valuable work. A study on care workers found that raising the pay of long-term care workers by 15 percent can result in a series of positive outcomes, including higher productivity, reduced turnover and staff shortages, and improved financial security leading to workers depending less on welfare programs for their survival.³⁵ Policies that support higher wages and improved benefits and worker protection for long-term care workers are vital to acknowledge and sustain their role in the health care industry.

To some degree, the higher rate of mental illness among aides/assistants may be related to an underreporting of mental illness among the other occupations. Pre-pandemic, much of the literature on health workforce burnout has focused on physicians and nurses.^{1,36} Although burnout is not itself a health condition per the World Health Organization, burnout is strongly associated with depression.³⁷ Yet, we found no report of mental health conditions for physicians in the PSID. This lack of reporting may be related to a cultural issue among physicians who may grapple with the stigma of mental health conditions and be unable to be open about their own illnesses, in part due to fear about losing their medical license.³⁸ Similar underreporting of mental illness may be occurring among nurses; during the pandemic, nurses have been found to be underreporting workplace violence,²⁰ which has been found to affect the mental well-being of nurses.³⁹ Without information on the extent of mental illness among physicians, it is difficult to pursue policies and programs to support their well-being.

Our study faces some limitations. First, PSID was not designed to monitor specific occupations and as a result the sample of individuals per health care occupation may be small. Some of our occupation groups represent heterogenous jobs, each of which may face their own occupational health challenges. Second, we do not control for selection into health care jobs. For instance, those selecting into health care may be more aware and proactive in taking care of their own health due to their professional knowledge and have more access to health care by virtue of working in these environments. However, given the similarities in physical health conditions between health care and non-health care workers, we do not find a particular advantage of working in health care, and if anything, there may be a disadvantage given the differences in mental illness diagnoses. Third, we have ascertainment bias resulting from underreporting of mental and physical illness, especially among uninsured and underinsured

long-term care workers who may not have access to health care services that would allow them to get diagnosed with health care problems. However, our findings suggest that long-term care workers have among the worst health, which may be exacerbated by some not having access to health insurance. Our estimates may be an underreporting of conditions given that some workers may not have access to a provider.

CONCLUSIONS

COVID-19 put health care systems and workers under unprecedented pressure.^{3,40,41} Additionally, COVID-19 intensified the focus on burnout experienced by health care workers as they grappled with working longer hours and treating large numbers of sick patients for multiple years. While longitudinal datasets provide opportunities to track and discern in detail about the pre- and post-COVID health and burnout issues, it is also imperative to realize that these datasets are inadequate if health care professionals are not open to sharing about their own illnesses, especially, mental health conditions. This would limit the ability to learn and recommend policy changes about the critical occupational issues affecting the health of health care workers. Additionally, low-wage health care workers may not know that they are sick, or more critically get the care they need for diagnosed problems, due to lack of health insurance affecting their access to health care services.

Findings from this study provide important baseline information about the prevalence of illnesses in health care workers in the pre-COVID era. Ongoing follow-up will be crucial in informing policymakers on the most prevalent mental and physical health conditions to help develop policies targeting the most at-risk health care workers. Burnout and poor health conditions among health care workers have far-reaching consequences as they not only affect the health professionals themselves but also affect their ability to provide consistent and ongoing care to their patients.

DECLARATION OF CONFLICTING INTERESTS

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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AUTHORS

Arati Dahal, PhD, Center for Health Workforce Studies, University of Washington

Bianca K. Frogner, PhD, Director, Center for Health Workforce Studies, University of Washington

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University of Washington • School of Medicine
Box 354982 • Seattle WA 98195-4982
phone: (206) 685-0402 • fax: (206) 616-4768
<https://familymedicine.uw.edu/chws/>

APPENDIX A

Table A-1: Occupation Categories

Occupation Categories	Occupations available in the PSID
Aides/Assistants	Nursing, Psychiatric and Home Health Aides, Medical Assistants, and other assistants (e.g., Occupational Therapy Aides and Assistants, Physical Therapy Aides and Assistants, Massage Therapists, Dental Aides, Pharmacy Aides, Vet Assistants, Phlebotomists, and Health Care Support Workers)
LPNs/LVNs	Licensed Practical Nurse, Licensed Vocational Nurses
RNs	Registered nurses (RNs), including advanced practice RNs
Technicians	Emergency Medical Technicians (EMTs) and Paramedics, Clinical Lab Technologists and Technicians, Dental Hygienists, Diagnostic-Related Technologists and Technicians, Health Practitioner Support Technicians, Medical Records, Opticians, Miscellaneous Technicians, and Other Technicians
Therapists/Other Advanced Providers	Physician Assistants, Dietician and Nutritionists, Occupational Therapists, Physical Therapists, Recreational Therapists, Respiratory Therapists, Speech-Language Pathologists, Other Therapists, and Health Diagnosing and Treating Practitioners
Physicians/Other Doctorates	Physicians and Surgeons, and all other doctorate level positions such as Chiropractors, Dentists, Pharmacists, and Veterinarians