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A Scoping Review of the Literature Addressing

Psychological Well-being of Racial and Ethnic Minority Nurses During the COVID-19 Pandemic

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Highlights:

- The COVID-19 pandemic disproportionately impacts racial and ethnic minority nurses.
- Understanding the pandemic's psychological impact on minority nurses in the US is emerging.
- The available studies identify few racial/ethnic differences; significant gaps remain.
- Further understanding of pandemic impacts is needed to retain a diverse nursing workforce.

ABSTRACT

The COVID-19 pandemic has affected the well-being of nursing professionals, especially long-term and acute care nurses, many of whom are nurses of color. We examine the evidence and gaps in the literature addressing psychological well-being of racial/ethnic minority RN's in the U.S. during COVID-19. We searched eight databases during March 2022 and used Joanna Briggs' Scoping Review Methodology and PRISMA-ScR reporting standards. Seven studies met inclusion criteria. Two exclusively examined nurses; five reported findings from heterogenous samples of healthcare workers. No significant racial/ethnic differences in well-being were reported among healthcare workers. Among nurses, if a difference existed, White nurses reported decreased psychological well-being relative to ethnic and racial minority nurses. Two studies report modest racial/ethnic differences in nurses' psychological well-being. Significant gaps in the literature remain; future studies should analyze groups of healthcare workers separately, clearly identify racial and ethnic groups, and examine the role of respondents' work setting.

The coronavirus disease (COVID-19) pandemic has significantly strained health systems and healthcare workers (HCW's) across the world (Firew, et al., 2020). In the United States (US), waves of critically ill COVID-19 patients overwhelmed hospitals (Sharma, et al., 2020) while, on the frontlines, essential HCW's struggled to provide patient care despite inadequate staffing, extended work hours, working in unfamiliar care settings, and lacking necessary equipment and supplies (Norful, et al., 2021; Mensinger, et al., 2021). These challenges, combined with the stresses of caring for critically ill patients, many of whom did not survive, have contributed to significant stress, anxiety, depression, burnout, and moral injury among HCW's (Mensinger, et al., 2021; Sharma, et al., 2020; Norful, et al., 2020; Firew, et al., 2020; Norman, et al., 2021).

Nurses and nursing assistants are the largest group of HCW's in the US with more than 4 million registered nurses (RN's) and licensed vocational nurses/licensed practical nurses (LVN's/LPN's, hereafter referred to as LVN's) in the workforce (Bureau of Labor Statistics, 2022a; Bureau of Labor Statistics,

2022b). Regardless of educational background, nursing staff/personnel are at highest risk of COVID-19 exposure and mortality because they provide extended periods of direct patient care in high-risk settings, while experiencing supply and equipment shortages and inadequate staffing (Havae, et al., 2021). As the frontline HCW's who provide most of the direct, hands-on care to patients and their families, nurses have been directly exposed not just to COVID-19, but extensive suffering and death while simultaneously supporting grief-stricken families who could not visit dying loved ones (Stockton & King, 2021). Nurses (and other HCWs) also lived with the daily fear of taking the deadly virus home, with many choosing to isolate from their families to prevent spreading the disease to loved ones (Shechter, et al., 2020). Together, these experiences have significantly increased nurses' risk for psychological distress (LoGiudice & Bartos, 2021; Marshall, 2020).

Importantly, nurses from racial and ethnic minorities have been disproportionately affected by the COVID-19 pandemic. According to National Nurses United (2021), of the RN's who died COVID-related deaths, 54.1% were nurses of color – while only 24.1% of nurses in the US are individuals of color. The pandemic has also significantly affected the psychological well-being of minority nurses: Among nurses of color, 42% report having had "an extremely stressful, disturbing, or traumatic experience due to COVID-19;" 29% described themselves as "not" or "not at all" emotionally healthy (American Nurses Foundation, 2021b); and 50% report considering leaving their position, most commonly citing work negatively affecting their mental health as the reason (American Nurses Foundation, 2021a).

These findings are particularly disturbing given the need for racial and ethnic diversity within the nursing profession. According to the Sullivan Commission (2004), there is a direct link between the lack of minority health care providers and poorer outcomes for minority patients. National nursing organizations and nursing leaders recognize that a diverse nursing workforce is necessary to provide quality, culturally sensitive care that reflects the evolving demographic of the country, and they have made recruiting and retaining racial and ethnic minority nurses a priority (American Association of Colleges of Nursing, 2019). Given the critical need to diversify the profession, it is imperative to

understand how the COVID-19 pandemic affected the psychological well-being of racial and ethnic

minority nurses and to develop supportive interventions to prevent their exodus from the profession.

Studies of the psychological well-being of nurses, and racial/ethnic minority nurses specifically,

during the pandemic are just beginning to appear in the literature. However, most of these studies

examine nurses outside of the United States. Given the unique organizational structure of US healthcare

systems and the racial disparities in US health and socioeconomic systems, findings from studies of

nurses in other countries are not generalizable to nurses in the US. Therefore, this scoping review

examines the types of available evidence, findings, and knowledge gaps in the body of available literature

on the psychological well-being of racial and ethnic minority nurses in the United States during the

COVID-19 pandemic.

## Methods

This review follows the Joanna Briggs Institute (JBI) guidelines for a scoping review (Peters et

al., 2020), as this is an appropriate choice to explore the scope of a body of literature on a topic by

mapping and summarizing available evidence. Scoping reviews help identify knowledge gaps and areas

for further research. Results are reported according to the Preferred Reporting Items for Systematic

reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidance on reporting

literature reviews (Page et al., 2020). As the purpose of a scoping review is to understand the range of

evidence available on a topic, inclusion criteria are quite broad and formal assessment of the quality of

individual studies is usually not completed (Peters, et al., 2015).

### Identifying Relevant Studies

Studies were included in this review if: 1) the study population included nurses; 2) at least one

aspect of psychological well-being during the COVID-19 pandemic was measured; 3) racial/ethnic

breakdown of psychological well-being outcomes were included in the analysis; and 4) the study was

conducted in the United States (see Table 1 for complete list of inclusion/exclusion criteria).

The database search strategy was developed in consultation with a medical librarian. Medline®

Complete, CINAHL® Complete, APA PsycInfo®, Web of Science Core Collection, PubMed, ProQuest

Dissertation, EBSCO Academic Search Complete, and Google Scholar were searched in March 2022. The search strategies combined keywords, keyword phrases, and subject headings/thesauri terms according to the limits of each database. The main topic areas included COVID-19, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), nurse, racial and ethnic minority. This was matched with mental health terminology focusing on mental health and wellbeing as well as symptoms such as depression, anxiety, post-traumatic stress disorder (PTSD), and related issues (see Table 2).

Where database search limits allowed, the following parameters were used for each search: publication date 2020-present and English language. Hand searches were also performed including a grey literature search of the reference lists of included articles, articles that cited the included documents, as well as those of the reviews of literature identified in our database search results.

**Study Selection and Data Extraction**

The search strategy yielded 347 publications. Duplicates (n=94) were removed leaving 253 articles. Title and abstract screening identified 227 articles that did not meet inclusion criteria. The full texts of the remaining 26 articles were reviewed and 19 articles were excluded with reasons noted in Figure 1. The remaining 7 articles are included in this scoping review (Figure 1). Publications included one dissertation and six journal articles.

The following information was extracted from the publications and is presented in Table 3.

- Author, date of publication.

- Inclusive dates of data collection.

- Study design.

- Total sample size and number/breakdown of nurses in sample.

- Key sample characteristics.

- Variables examined.

- Instrument(s) used to measure psychological well-being.

- Findings.

**Results**

**Description and Scope of Included Studies**

Of the seven included papers, five investigated multiple types of healthcare workers including nurses, and two focused on only nurses. The studies categorized "nurse" differently: three studies included RN's and LVN's; one study included only RN's; one included RN's, Nurse Practitioners (NP's), Certified Nurse Midwives (CNM's), and "other nurse;" and two did not categorize beyond the label "nurse."

Five of the studies analyzed a nationwide sample and two included samples from within much smaller geographic areas: New York City area of New York, and Southern Colorado. All but two of the studies included HCW's from a variety of settings (inpatient, outpatient, hospital, skilled nursing facility, education, etc.). The study set in Southern Colorado only recruited HCW's from long-term care facilities and one of the nationwide studies specifically recruited outpatient reproductive health care providers.

All studies were descriptive, with the majority published in 2021, one published in 2020 and one in 2022. In all but one study, data were collected between April and September of 2020 over an average of 3 months. One study analyzed data collected from April 2020 through July 2021. Five studies used a cross-sectional survey design, one study used qualitative methods, and one was a mixed-methods study. The qualitative study collected data through semi-structured interviews; the mixed-methods study used a survey that included open-ended response items. Instruments used for data collection varied from validated measures (e.g., Generalized Anxiety Disorder – 7 [GAD-7], Patient Health Questionnaire – 2 [PHQ-2]) to researcher-created questionnaires and semi-structured interview guides.

**Studies of Healthcare Workers Including Nurses**

Samples of five studies (Shang, et al., 2021; Lusk, et al., 2022; Forrest, et al., 2020; Comfort, et al., 2021; Schneider, 2021) included a variety of health professions. Each study provided a racial/ethnic breakdown of the overall sample in their analysis, but none provided further breakdown by profession, so we are unable to draw conclusions about racial/ethnic minority nurses specifically.

In Shang, Kim, and Cheng's 2021 qualitative study of Asian HCW's in the US and Canada participants reported 1) a surge in racial microaggressions associated with the COVID-19 pandemic and

2) a lack of institutional and public acknowledgement of the hardships faced by Asian HCW's

experiencing microaggressions related to COVID-19. This increase in racial discrimination and

microaggressions experienced by Asian HCW's is likely to have a detrimental effect on their

psychological well-being (Nadal, et al., 2014).

Job burnout is also associated with decreased psychological well-being (Rehman, et al., 2020),

however, the two studies that examined job burnout among HCW's found no significant difference in

burnout between racial/ethnic groups (Forrest, et al., 2021; Lusk, et al., 2022). It is important to note that

the articles by these authors analyzed data from the Healthcare Worker Exposure & Outcomes (HERO)

registry. The Forrest, et al. (2021) paper reported analysis of survey responses from April 10, 2020 to July

31, 2020 (N=14,600) while the Lusk, et al. (2022) paper reported analysis of survey responses from April

10, 2020 to June 30, 2021 (N=24,769), suggesting some overlap in the findings reported. Other measures

of psychological symptoms used by researchers resulted in inconsistent results. No racial/ethnic

differences were described in one study (Forrest, et al., 2020) which used report of emotional distress

experiences to measure psychological outcomes, however a second study which used the same measure

(Lusk, et al., 2022) reported Hispanic respondents most likely and Asian and Black respondents least

likely to report three or more negative emotional impacts. No racial/ethnic differences were found in one

study (Comfort, et al., 2021) that used report of "stress" or "anxiety or depression" as a measure of

psychological outcomes, however Schneider (2021) reported that White participants endorsed worse

emotional health and well-being (e.g., anxiety, depression, stress, insomnia) than participants of color

according to the Epidemic-Pandemic Impacts Inventory (EPII).

**Studies Specifically of Nurses**

Only two studies looked at the psychological well-being of nurses specifically (Montoya, et al.,

2021; Kovner, et al., 2021). Both studies examined symptoms of depression and anxiety using validated

measures.  In these studies, White nurses were more likely to report anxiety than Hispanic nurses

(Montoya, et al., 2021) or Black and Asian (Kovner, et al., 2021) nurses. However, findings related to

depression were inconsistent. Montoya and colleagues (2021) similarly found that White nurses were

more likely than Hispanic nurses to report symptoms compatible with a major depressive episode, whereas the second study (Kovner, et al., 2021) found no significant differences in depression scores based on race/ethnicity.

## Discussion and Recommendations

To the best of our knowledge, this scoping review is the first review of its type to explore the psychological well-being of racial and ethnic minority nurses in the United States during the COVID-19 pandemic. Our review found few significant differences between racial and ethnic groups. Studies of exclusively nurses found that if a difference existed, White nurses were more likely to report mental health symptoms than nurses of other racial/ethnic groups. When study participants included a heterogenous group of HCW's, including nurses, most findings indicated no racial/ethnic differences in this same outcome. These findings were unexpected given the disproportionate physical, mental, and emotional impact of the COVID-19 pandemic on communities of color, including nurses (Wingfield, 2020; Sequist, 2020; Boserup, et al., 2020).

From a methodological perspective, the two studies documenting greater anxiety among White nurses contained relatively small, unrepresentative samples that were predominantly (69%, 79%) White, therefore findings for the nurses of color may not be reliable because the samples included few racial and ethnic minority nurses. These two studies were also the only studies that used an instrument designed to screen for generalized anxiety disorder (Montoya, et al. GAD-7; Kovner, et al. Generalized Anxiety Disorder-2 [GAD-2]) as their measure of psychological distress. If nurses of color were feeling more emotionally exhausted or burned out than anxious, the researchers may not have captured the type of psychological symptoms experienced by racial and ethnic minority nurses. That is, perhaps the range of measures used to assess mental health was too limited to capture the specific ways pandemic stress affected mental health in nurses of color. Future research should address a broad range of emotional experiences and the patterns of coping among nurses to further elucidate the pandemic's impact on the profession.

Another plausible alternative explanation for these findings may be that fear of experiencing negative repercussions such as stigmatization, marginalization, or job loss--a finding that has been documented among racial and ethnic minority groups in the US (Misra, et al., 2021) -- may have dampened willingness to share emotional symptoms for nurses/HCWs of color. Indeed, prior research conducted with communities of color has engendered a lack of trust in the medical research establishment that could affect how willing nurses/HCWs of color may be to participate in research or trust the researcher's agenda (George, et al., 2014). This could result in selection biases that undermine the quality of the data collected. Future research should address these challenges to ensure robust sampling and response from nurses of color.

Several other contextual issues may help explain these findings and warrant further discussion. The media portrayal of nurses and other HCWs has not been consistent throughout the pandemic. In the early days of the pandemic, when COVID-19 had no effective treatments and vaccines were not available, HCW's were hailed as "Healthcare Heroes," sacrificing their own health and welfare to serve those in need. This narrative, while meant to convey appreciation and support, may have actually been deleterious to HCW's mental health (Khan, et al., 2021; Cox, 2020). This hero narrative also stands in stark contrast to the negative attitudes nurses and other HCW's experienced later in the pandemic from anti-vaxxers and COVID non-believers (Fung, 2021). Given this, it would be helpful to put the dates of data collection in temporal context when evaluating findings because most of the studies included in this review collected data in the early months during the "Healthcare Heroes" stage of the pandemic when there was a great deal of fear, uncertainty, and socio-economic upheaval. Only one study (Lusk, et al., 2021) collected data for over a year, well into the time when vaccines were available for all adults in the US. Thus, the findings from this study are likely to reflect HCWs mental health and well-being as they responded to the shifting societal contexts of the pandemic. Research is needed to examine the well-being trajectories of nurses of color over time as the pandemic evolved alongside several other compounding, cascading collective stressors (Silver et al., 2021).

While most studies collected data from nationwide samples, two studies used geographically limited samples: one in the New York City (NYC) area (Kovner, et al., 2021), and a second in Colorado Springs, Colorado (Schneider, 2021). NYC was particularly hard-hit early in the pandemic (Van Dorn, et al., 2020) which may have produced a greater impact on the psychological well-being of nurses. However, data collected from nurses/HCW's in these specific metro areas cannot be generalized to the larger population of nurses and other HCW's in the US.

It is also important to identify the setting in which nurses work to fully understand the differential impact of the pandemic on the psychological well-being of racial and ethnic minority nurses. White nurses are overrepresented in outpatient settings and non-direct care roles, while HCW's of color are more likely to work in acute or long-term inpatient care and personal care settings (Artiga, et al., 2020; Jewett, 2020). These settings are more likely to have inadequate staffing and resources such as personal protective equipment - placing HCW's of color at greater risk of COVID-19 exposure; physical and mental exhaustion; and moral injury (Artiga, et al., 2020). Future research should systematically examine the psychological well-being of racial and ethnic minority nurses throughout the pandemic and address how different work settings may have contributed to psychological challenges faced by ethnic/minority nurses.

Studies in this review were inconsistent in the specific professional roles that were included in the category "Nurse." RN's, including NP's and CNM's (collectively referred to as advanced practice registered nurses, or APRN's); LPN's; and nursing assistants have very different education levels, responsibilities, accountabilities, and pay rates. Failing to differentiate type of nurse in data analysis ignores these differences that may have contributed to the impact of pandemic stressors on the psychological well-being of nurses of color.

There was also inconsistency across studies in reporting of Hispanic/Latino status. Three studies added a Hispanic/Latino category to the variable "race;" participants who indicated Hispanic/Latino *ethnicity* were included in this category regardless of their reported race. Two studies reported Hispanic/Latino as the participant's race with no further elaboration. One study asked participants if they

were "Hispanic" or "not Hispanic," but chose not to combine the modifier with the variable "race" to create a set of dummy variables such as White Hispanic, White not-Hispanic, etc. when analyzing the data (Kovner, C. personal communication, May 9, 2022). When examining racial differences in psychological well-being it is important to delineate racial identity clearly: The experience of a White Hispanic nurse may be different from a Hispanic nurse of color (Pew Research Center, 2021).

This review was limited by the small number of studies which met inclusion criteria and the fact that most of the studies occurred early in the pandemic, thereby limiting their ability to address psychological well-being over time as the pandemic has unfolded. Several critical gaps were highlighted by this review. First, up to March 2022, only two studies have been published that address the racial/ethnic breakdown in nurses' psychological well-being during the pandemic. Second, in both studies focused on nurses and in studies of HCW more generally there is no consistency in the definition used to categorize a "nurse." Third, identification of work setting is an important variable that has not been analyzed alongside racial/ethnic differences. Finally, there has been inconsistent breakdown of race and ethnicity in these studies. Future studies should include a racially/ethnically diverse nationwide sample of nurses with clear racial/ethnic breakdown, type of licensure, and include work setting in the analysis.

**6. Conclusion**

This scoping review of the psychological well-being of racial and ethnic minority nurses sheds light on the impact of a major pandemic on the largest group of HCW's in the United States. By identifying the types of evidence available and gaps in evidence, this review can help direct future research to better understand the differential impact of the COVID-19 pandemic on underrepresented minority nurses so it can inform development of interventions that support retention of a diverse nursing workforce.

Conflict of interest statement

The authors have no conflicts of interest to declare.

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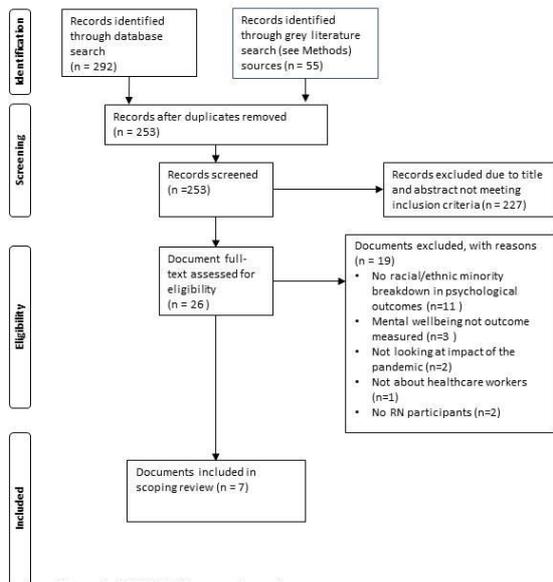
Figure 1. PRISMA diagram of search strategy.

Figure 1. PRISMA diagram of search strategy.

| *Inclusion criteria* | *Exclusion criteria* |
|---|---|
| ● Study sample includes registered nurses | ● Study outside of the United States |
| ● Measures at least one aspect of mental wellbeing | ● Does not include or report on racially/ethnically diverse sample characteristics or findings |
| ● Published in English | ● Does not address mental health symptoms experienced during the protracted COVID-19 pandemic |
| ● Description of study sample characteristics includes racial/ethnic breakdown | ● Does not include RNs or APRNs |
| ● Focus of manuscript is to understand the mental health/well-being of health care workers during the protracted COVID-19 pandemic | ● |

**Table 1.**

Inclusion and exclusion criteria for article selection.

("COVID-19"[Mesh] OR "SARS-CoV-2"[Mesh] OR "COVID-19 Vaccines"[Mesh] OR "COVID-19 Testing"[Mesh] OR "COVID-19 Serological Testing"[Mesh] OR "COVID-19 Nucleic Acid Testing"[Mesh] OR "novel coronavirus" OR COVID19 OR covid-19 OR SARS-CoV-2 OR 2019-nCoV OR "coronavirus disease 2019" OR "coronavirus disease-19" OR coronavirus[tiab]) AND ("Nursing Staff"[Mesh] OR "Nurses"[Mesh] OR nurse*[tiab]) AND ("black and minority ethnic" OR BME OR "Black, Asian, and minority ethnic" OR BAME OR "Black, Indigenous and People of Color" OR BIPOC OR ethnic* OR minorit* OR "african american" OR black[tiab] OR asian[tiab] OR "African Americans"[Mesh] OR "Minority Groups"[Mesh] OR "Ethnic Groups"[Mesh]) AND ("Stress, Psychological"[Mesh] OR burnout OR burn-out OR "compassion fatigue" OR "Bullying"[Mesh] OR bully* OR "Social Segregation"[Mesh] OR "Race Relations"[Mesh] OR "Racism"[Mesh] OR racism OR targeted OR targeting OR "Incivility"[Mesh] OR "Prejudice"[Mesh] OR "Scapegoating"[Mesh] OR "Social Discrimination"[Mesh] OR "Social Isolation"[Mesh] OR "Social Marginalization"[Mesh] OR disproportiona* OR "Suicide"[Mesh:NoExp] OR "Suicidal Ideation"[Mesh] OR "Suicide, Attempted"[Mesh] OR "Suicide, Completed"[Mesh] OR "Self-Injurious Behavior"[Mesh] OR "Mental Fatigue"[Mesh] OR suicide OR (mental N3 fatigue) OR "Death"[Mesh] OR "Morbidity"[Mesh:NoExp] OR "Mortality"[Mesh:NoExp] OR death[tiab] OR mortality OR "Depression"[Mesh] OR "Anxiety"[Mesh] OR "Catastrophization"[Mesh] OR PTSD OR depression OR anxiety OR catastrophiz* OR distress*)

Filters: English, from 2020 – March 2022

**Table 2**. Full electronic search strategy for PubMed.

**Table 3.**

| Publication | Inclusive Dates of Data Collection | Study Design | Sample Size and Number of Nurses in Sample | Sample Characteristics | Variables Examined | Instrument(s) Used | Findings |
|---|---|---|---|---|---|---|---|
| Forrest, et al. (2020) | April 10, 2020 – July 31, 2020 | Cross-sectional survey | Total sample: 14,600 Nurses (RN & LPN): 4,776 (33.2%) | Adult employed in a healthcare setting or a healthcare-affiliated setting.<br><br>Racial/ethnic breakdown: (Full sample) Asian/Pacific Islander: 917 (6.3%) Black: 527 (3.6%) Hispanic/Latino (any race):1,128 (7.7%) White: 11,523 (78.9%) Other: 505 (3.5%) | 1) Job burnout<br><br>2) Physical and emotional distress experiences | **Job burnout**: single item validated measure<br><br>**Emotional distress experiences**: modified Gallup negative experiences index- 6 yes/no questions asking participants if they experienced a certain feeling a lot of the day yesterday, 1 yes/no question if they had trouble sleeping last night. | **Job burnout**: 41% of healthcare workers reported experiencing job burnout. Job burnout was not associated with race/ethnicity.<br><br>**Emotional distress experiences:** No racial/ethnic difference in risk of reporting distress experiences.<br><br>**\* Findings not broken down by profession/role** |
| Lusk, et al. (2022) | April 10, 2020-June 30, 2021 | Cross-sectional survey | Total Sample: 24,769 Nurses (RN & LPN): 7,450 (30.3%) | Adult employed in a healthcare setting or a healthcare-affiliated setting.<br><br>Racial/ethnic breakdown: (Full sample) Asian: 1,524 (6.2%) Black: 1,148 (4.6%) Hispanic/Latino (any race): 1,942 (7.8%) White: 19,232 (77.6%) Other: 923 (3.7%) | 1) Job burnout<br><br>2) Physical and emotional distress experiences | **Job burnout**: single item validated measure<br><br>**Emotional distress experiences**: modified Gallup negative experiences index- 6 yes/no questions asking participants if they experienced a certain feeling a lot of the day yesterday, 1 yes/no question if they had trouble sleeping last night. | **Job burnout:** 27.8% of HCW's responded, White participants most likely to respond. 42.4% of HCW's reported job burnout. Job burnout was not significantly associated with race/ethnicity.<br><br>**Emotional distress experiences**: 52.4% of HCW workers responded, White participants most likely to respond. Hispanic respondents most likely/Asian and Black participants least likely to report at least 3 daily impacts.<br><br>**\* Findings not broken down by profession/role** |
| Comfort, et al. (2021) | April 21, 2020 – June 24, 2020 | Cross-sectional survey | Total sample: 288 Nurses in sample: RN = 61 (23%) NP/CNM = 82 (30%) Other nurse = 7 | Reproductive health providers engaged in clinical care or counseling about contraception. | Symptoms of stress, anxiety, or depression | Participants were asked in what ways they have been affected by COVID-19. | Number (%) of participants who reported feelings of stress, anxiety and/or depression: Total sample: 187 (65%) Nurses: RN = 34 (55.7%) NP/CNM = 53 (64.6%) |

| | | | (3%) | Racial/ethnic breakdown: (Total sample) Asian/Pacific Islander: 26 (10%) Black: 29 (11%) Hispanic/Latinx: 40 (15%) Native American: 4 (2%) White: 165 (62%) Other: 3 (1%) **\*Total sample size may be different from racial/ethnic breakdown data due to missing or inconsistent data** | | | Other nurse = 6 (85.7%) In total sample there were no differences by race/ethnicity between those who reported "Stress" or "Anxiety or depression" and those who did not. **\*Nurses' findings not broken down by race/ethnicity** |
| Montoya, et al. (2021) | July 24, 2020 – August 17, 2020 | Cross-sectional survey | Total sample: 393 Nurses: 393 | Licensed and employed nephrology nurses in the US who were members of American Nephrology Nurses Association Racial/ethnic breakdown: Asian/Pacific Islander: 31 (7.9%) Black: 28 (7.1%) Hispanic/Latino: 18 (4.6%) Native American: 3 (0.8%) White: 310 (78.9%) Other: 2 (0.5%) Prefer not to answer: 8 (2%) | Symptoms of anxiety and depression | **Anxiety**: GAD-7 **Depression**: PHQ-2 | **Anxiety**: White nurses more likely than Hispanic nurse to have scores compatible with at least mild anxiety (50% vs. 39%). **Depression**: White nurses more likely than Hispanic nurses to have scores compatible with major depressive episode (19% vs. 4%). |

| Kovner, et al. (2021) | May 27, 2020 – July 11, 2020 | Cross-sectional survey | Total sample: 2,483 Nurses: 2,483 | Registered nurses employed by NYU Langone Health System<br><br>Racial/ethnic breakdown:<br>Asian: 221 (15.4%)<br>Black: 142 (9.9%)<br>Native American/American Indian/Native Hawaiian/ Pacific Islander, Other: 89 (6.2%)<br>White: 986 (68.6%)<br><br>**\*Total sample size may be different from racial/ethnic breakdown data due to missing or inconsistent data** | Symptoms of anxiety and depression | **Anxiety**: GAD-2<br>**Depression**: PHQ-2 | **Anxiety**: Scores were higher for White RN's compared to Black and Asian RN's.<br><br>**Depression**: No significant differences in depression scores based on race/ethnicity. |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Shang, Kim, & Cheng (2021) | May 2020 – September 2020 | Qualitative | Total sample: 30<br><br>Nationality of total sample -<br>American: 15 (50%)<br>Canadian: 15 (50%)<br><br>Nurses: 16 (53%)<br><br>Nationality of nurses in sample not provided | Self-identified Asian-American or Asian-Canadian health care professionals<br><br>Ethnic breakdown:<br>Chinese: 8 (27%)<br>Filipino/Filipina: 5 (17%)<br>Vietnamese: 5 (17%)<br>Taiwanese: 3 (10%)<br>Cambodian: 2 (7%)<br>Korean: 2 (7%)<br>Multiracial: 2 (7%)<br>Japanese: 1 (3%)<br>Malaysian: 1 (3%)<br>Pakistani: 1 (3%) | Discrimination and racial microaggressions | | Thematic analysis identified 1) a surge in racial microaggressions associated with the COVID-19 pandemic, and 2) a lack of institutional and public acknowledgement of the hardships faced by Asian healthcare workers experiencing microaggressions related to COVID-19.<br><br><br>**\* Findings not broken down by country of residence or profession/role** |

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| Schneider (2021) | April 2020 – July 2020 | Cross-sectional survey | Total sample: 47<br><br>Nurses (RN & LPN): 11 | Long term care facility employees in Southern Colorado<br><br>Racial/ethnic breakdown:<br>African American: 7 (13.2%)<br>Asian American: 6 (11.3%)<br>Hispanic ethnicity (any race): 9 (17%)<br>White: 29 (54.7%)<br>Other: 2 (0.9%)<br><br>**\*Total sample size may be different from racial/ethnic breakdown data due to missing or inconsistent data** | Emotional and mental health and well-being as defined by the emotional health and well-being subscales of the Epidemic-Pandemic Impacts Inventory | **Epidemic-Pandemic Impacts Inventory:** Emotional Health & Well-Being and Mental Health & Well-being subscales | **Emotional Health and Well-being:** White participants reported more concerns than did participants of color.<br>**Mental Health and Well-being**: White participants reported more issues compared to Asian participants.<br><br>**\* Findings not broken down by profession/role** |

RN = Registered Nurse, LPN = Licensed Practical Nurse, HCW = Healthcare Worker, CNM = Certified Nurse Midwife, NP = Nurse Practitioner
GAD-2 = Generalized Anxiety Disorder scale-2, GAD-7 = Generalized Anxiety Disorder scale-7, PHQ-2 = Patient Health Questionnaire-2,