HAWAI'I STATE CENTER FOR NURSING
Connecting Nurses. Transforming Healthcare.

HSCN ADVISORY BOARD
NOTICE OF MEETING

Tuesday, April 18th, 2023
Time: 5:30 -7:00 P.M.
Hawai'i State Center for Nursing Conference Room – C105 H
Biomedical Sciences Building - 1960 East-West Rd, Honolulu, HI 96822
and via ZOOM Teleconference*

Purpose:
The Advisory Board Meeting's purpose is to update the Advisory Board Members of HSCN mandates and activities and to seek their input and guidance on current and future business.

Agenda:

Time	Item	Owner
5:30 P.M	Call to Order -Welcome and Introductions	Anne Scharnhorst
5:35 P.M	Public Comment Period for Agenda Items Individuals who are unable to provide testimony at this time will be allowed an opportunity to testify when specific agenda items are called. For both internet and phone access, when testifying, you will be asked to identify yourself and the organization, if any, that you represent. Each testifier will be limited to five minutes of testimony per agenda item. All written testimony submitted are public documents. Therefore, any testimony that is submitted orally or in writing, electronically or in person, for use in the public meeting process is public information and will be posted on the board's website.	Anne Scharnhorst
5:35 P.M	Nursing Research 1. Workforce Survey Update 2. Discussion on Recent Articles a. American Nurses Foundation's Pulse on the Nation's Nurses, Survey Series b. Examining the Impact of the COVID-19 Pandemic on Burnout and Stress Among U.S. Nurses c. How Inadequate Hospital Staffing Continues to Burn Out Nurses and Threaten Patients	Carrie Oliveira Laura Reichhardt

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Time	Item	Owner
6:25 P.M	Policy Update 3. SB63 SD2 HD3: RELATING TO NURSES. 4. HCR 204 / HR 208 / SCR 112 / SR 118: Working Group; Study; Nurse Licensure Compact	Laura Reichhardt
6:45 P.M	National Forum of State Workforce Centers 2023 Conference 1. Attendees 2. Staff: Katherine Finn Davis, Carrie Olivera 3. Board Member?	Laura Reichhardt
6:50 P.M	HSCN Strategic Planning Discussion 1. What do we wish to accomplish? a. Annual Strategic Planning Meeting	Laura Reichhardt
7:00 P.M	Meeting Adjournment	Anne Scharnhorst

Next Meeting: Tuesday, May 16th, 2023, 05:30 AM -7:00 PM, Hawaii State Center for Nursing Conference Room. A virtual attendance option may be provided in accordance with Sunshine Laws.

*Please look out for e-mail to follow the meeting with minutes for your approval, so they can be posted to the HSCN website within 40 days, in accordance with Act 64 SLH2017.

Attachments:

1. American Nurses Foundation's Pulse on the Nation's Nurses, Survey Series
2. Examining the Impact of the COVID-19 Pandemic on Burnout and Stress Among U.S. Nurses
3. How Inadequate Hospital Staffing Continues to Bur Out Nurses and Threaten Patients
4. Mission and Vision

Remote Meeting Access Details (Via ZOOM Conferencing):

You may join the meeting remotely using a computer, smart device or by phone. Please use the Meeting ID and see the access details below for the appropriate modality of access.

- To join the meeting from your computer, tablet or smart phone, follow the link provided:
  Link to access meeting:
  https://zoom.us/j/98145550776?pwd=aGhGdkpzaVdTbmIwK2RPN1pnbTladz09
  Meeting ID: **981 4555 0776**
  Passcode: **HSCNBOARD!**

- To join the meeting using your phone: Dial, +1 346 248 7799 US (Houston), Or +1 669 900 6833 US (San Jose) Or +1 253 215 8782 US (Tacoma), Or +1 312 626 6799 US (Chicago), Or +1 929 436 2866 US (New York) Or +1 301 715 8592 US (Washington D.C)
  Find your local number: https://zoom.us/u/aedUwzsTEp...

Meeting ID: **981 4555 0776**
Passcode: **8220415715**

Auxiliary Service or Disability Accommodation:

If you require an auxiliary aid, auxiliary services, or other accommodations due to a disability, please contact Brianne Atwood Kuwabara by phone at (808) 956-0545 or by email at batwood@hawaii.edu. Please make requests at least three working days in advance to allow adequate time to fulfill your request.

Upon request, this agenda/notice is available in alternative formats such as large print, or an ADA-compliant electronic copy.

Testimony:

Any interested person may submit testimony in writing to the Board on any agenda item by regular mail, email, or fax. An individual or representative wishing to testify in person should register prior to the start of the meeting. Testimony must be related to an item that is on the agenda, and such a person shall be required to identify the agenda item to be addressed by the testimony. Submit testimony by one of the following methods: Email to HSCFN@hawaii.edu, FAX to (808) 956-0547, mail to Hawaii State Center for Nursing Advisory Board 2528 McCarthy Mall Webster Hall 402 Honolulu, Hawai‘i 96822. Each individual is allotted five minutes, or an amount of time otherwise designated by the Chairperson, to provide testimony to the Board.

Invitation List:

Advisory Board Members

Name	Role/Title	Affiliation
Anne Scharnhorst DNP, RN, CNE	Chairperson, HSCN Advisory Professor of Nursing	Maui Community College
Bonnie Castonguay MBA, RN, CMC	Vice Chairperson, HSCN Advisory Board Co-founder and President	Ho‘okele Health Innovations, LLC
Linda Beechinor DNP, APRN	Member Executive Director	Hawai'i - American Nurses Association (Hawai'i-ANA)
Gloria Fernandez DNP, RN, PHNA-BC	Member Quality Assurance Coordinator	Hawaii State Department of Health Public Health Nursing Branch
Rhoberta Haley PhD, RN, FNP	Member Dean of the School of Nursing and Health Professions	Chaminade University of Honolulu
Rose Hata DNP, MBA, RN, APRN, CCRN, CCNS, NEA-BC	Member Director, Queen Emma Nursing Institute	The Queen’s Medical Center

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Name	Role/Title	Affiliation
Arthur Sampaga RN, MSN, CCRN, CHEP, CNML	Member Chief Nursing Officer, East Hawai'i Region	Hilo Medical Center
Doreen Nakamura DNP, MBA, RN, NEA-BC, CCM	Member Director of Clinical Care, Retired	Formerly with UHA Health Insurance
Julio Zamarripa MSN, RN	Member Director, Medical Subspecialties	Hawaii Pacific Health
Clementina Ceria-Ulep PhD, MSN, RN	Ex-Officio Member Interim Dean & Professor, Nancy Atmospera-Walch School of Nursing	University of Hawai'i at Mānoa

Other Attendees

Name	Role/Title	Affiliation
Laura Reichhardt MS, APRN, AGPCNP-BC	Executive Director	Hawai'i State Center for Nursing
Katherine Finn Davis PhD, RN, APRN, CPNP, FAAN	Associate Director, EBP	Hawai'i State Center for Nursing
Carrie Oliveira PhD	Workforce Researcher	Hawai'i State Center for Nursing
Liane Muraoka RN	Program Lead	Hawai'i State Center for Nursing
Donnelson Banquil	Administrative Officer	Hawai'i State Center for Nursing
Amy Ono	Administrative & Fiscal Support	Hawai'i State Center for Nursing
Brianne A. Kuwabara	Program Coordinator	Hawai'i State Center for Nursing

AMERICAN NURSES FOUNDATION

Three-Year Annual Assessment Survey:

Nurses Need Increased Support from their Employer

January 24, 2023

As the world readies for the third anniversary of COVID-19 pandemic, nurses remain on the frontlines of care delivery. Nurses across the US have been striking and demanding better working conditions from their employers. The continued stress experienced by nurses due to their work environment has pushed an already frail healthcare workforce to the brink of collapse. As a part of the Pulse on the Nation's Nurses Survey Series, the American Nurses Foundation has fielded its survey to probe today's pressing issues in nursing. The goal for the Three-Year Annual Assessment Survey is to identify changes to nurses' mental health and workplace support, while collecting additional insight into nurses' financial well-being, intent to leave, and satisfaction.

Amidst a national nursing shortage, nurses shared with us that they face: increasingly sick patients, family and patient abuse that is tolerated by employers, unsafe care environments, generational divisions, unrealistic patient volumes, inexperienced new nurses, and management that is often out of touch with the realities of direct care in their institutions.

SURVEY BACKGROUND

The American Nurses Foundation and Joslin Insight launched a non-incentivized online survey to nurses across the United States. The November 2022 survey was the third annual assessment and the thirteenth survey conducted by the Foundation since April 2020. The survey was completed by 12,581 nurses between November 1-25, 2022, including all 50 states and the District of Columbia. The survey has a ± 1.15% margin of error at a 99% confidence level. Around 82% of those surveyed responded to all questions, and over 6,000 nurses provided qualitative feedback on how healthcare has changed over the past five years.

RESPONDENT PROFILE

The survey was launched to nurses working in various settings across the entire continuum of care. Fifty-three percent are working in acute care hospitals, from small to large; 12% in primary, ambulatory or outpatient care facilities; 6% in community or public health facilities; and 6% in schools of nursing. Seventy-two percent of respondents provide direct care to patients. Ninety-one percent of respondents said they are currently employed, with 78% employed full-time. Four percent of respondents identified as a travel nurse. Seventy-one percent identified as White, 11% Black or African American, 5% Hispanic or Latino, 4% Asian, and 4% Mixed race. Forty-one percent of respondents indicated being 55 or older.

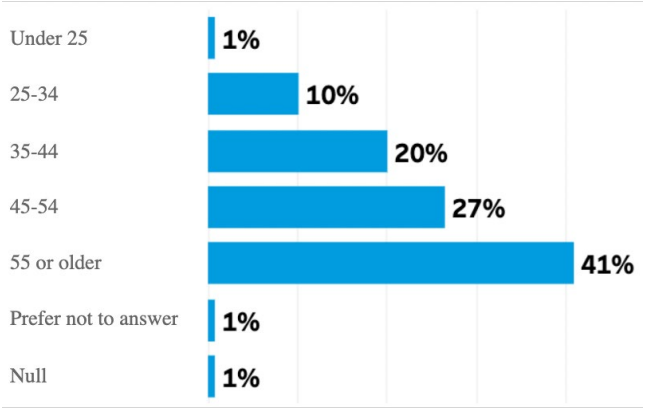


Figure 1 - Respondents indicate their age, Nov 2022

NURSES CONTINUE TO BE EXHAUSTED AND STRESSED

Sixty four percent of nurses report feeling stressed, and 57% exhausted. Additionally, certain segments of nurses are faring even worse. When analyzing the data by age or tenure, younger and more inexperienced nurses are struggling more with emotional health than their more experienced colleagues. Nearly one-third (32%) of nurses with less than 10 years of experience indicated being either not or not at all emotionally healthy. This is compared to just 8% of nurses with 41-50 years' experience. Additionally, the mean score for emotional health remains low. In this survey, nurses' responses represent a 3.3 on a scale from 1-5. This is a 6% increase from the January 2022 survey (3.1).

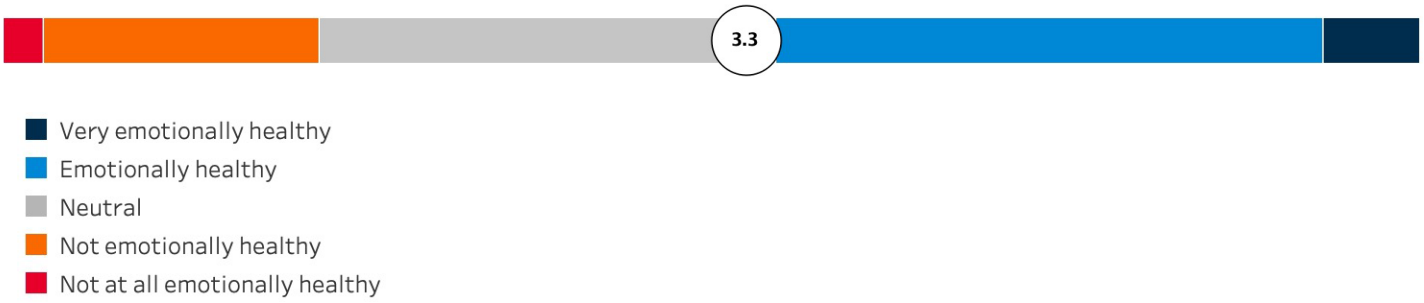


Figure 2 – Nurses rate their current emotional health, November 2022

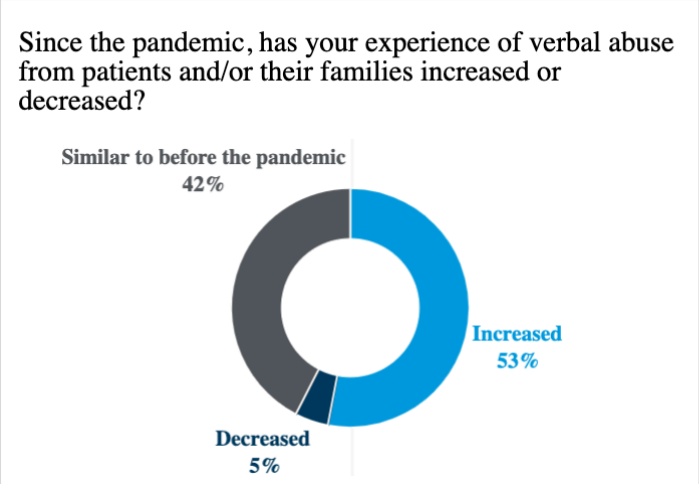
The gap between different groups of nurses persists throughout the data. Nurses with less than 10 years' work experience feel less valued, less supported, and less hopeful. Sixty-one percent of nurses under 35 indicated feeling anxious in the past 14 days, compared to only 33% of nurses 55 or older. And 33% of nurses under 35 indicated feeling depressed in the past 14 days, compared to 18% of nurses 55 or older. This is a trend that has been identified and monitored since 2021.

While the individual nurse well-being scores have improved slightly from the previous survey, respondents continue to express their exhaustion within a health care system that puts patients at risk by deprioritizing nurses and their needs. As one survey respondent shared, "Employers see nurses as expendable. There's no retention plan in place, and I feel like the unit wouldn't care if I left nursing altogether."

61% of nurses under 35 reported feeling anxious in the past 14 days; 33% said they felt depressed.

WORKPLACE VERBAL ABUSE AND RACISM PERSIST OR HAVE WORSENED

The Three-Year Assessment Survey identified an increase to verbal abuse in the workplace, with 53% of nurses having reported an increase in verbal abuse since the pandemic began. When asked whether there is a mechanism at their organization to report verbal abuse, 28% said 'no' and 15% 'not sure.' Notably, a higher number of nurses from large acute care hospitals indicated not having a mechanism to report verbal abuse. One nurse wrote, "There has been a significant increase in workplace violence and verbal abuse, without appropriate interventions implemented to address this problem. I do not feel safe at work."



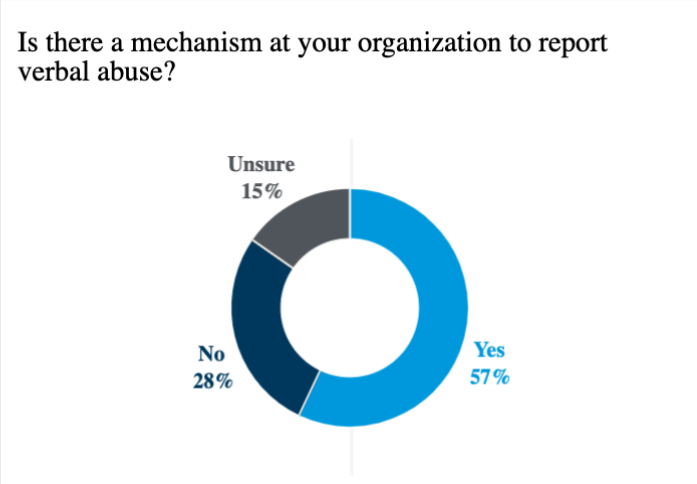
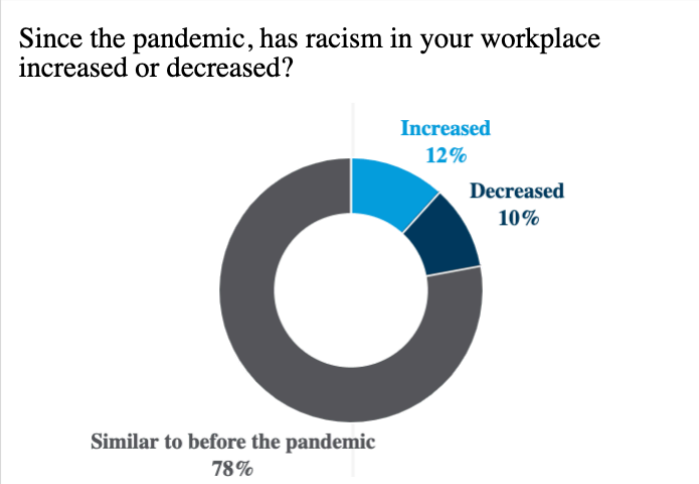


Figure 3 and 4 - Nurses indicate whether verbal abuse has increased and whether there is a mechanism to report verbal abuse, Nov 2022

Other questions assessed the state of racism in the workplace. While 12% of all respondents indicated that racism has increased since the pandemic, 21% of nurses of color said there has been an increase. When asked whether they have challenged an instance of racism, only 22% of nurses said 'yes' and 65% said 'no.' Notably, a higher percentage of nurses of color reported that they challenged acts of racism compared to respondents who identified as White.



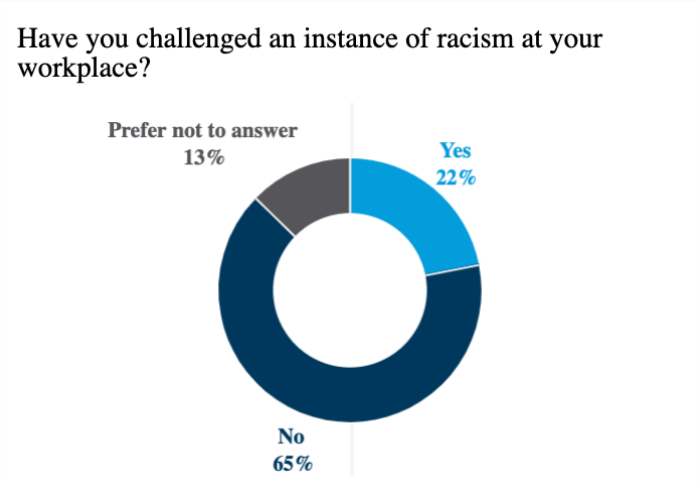


Figure 5 and 6 - Nurses indicate whether racism in the workplace has increased and whether they have challenged instances of racism, Nov 2022

NURSES NEED MORE SUPPORT FROM THEIR EMPLOYERS

The Survey of Perceived Organizational Support (SPOS) is a validated measure of the general belief held by an employee that the organization is committed to them, values their continued contributions, and is generally concerned about their well-being. The Foundation has continued to track five indicators regularly to measure how nurses perceive the support they receive from their employer. Statements range from an employer caring about their well-being to recognition of doing good work. These scores have not improved over the last four surveys. Overall, the scores have been consistently weak, with more nurses strongly disagreeing with the statements than strongly agreeing. The stagnant SPOS data is evidence nurses continue to need more support from their organizations. And when looking at segmented responses, it is clear certain groups and work settings are in more need than others.

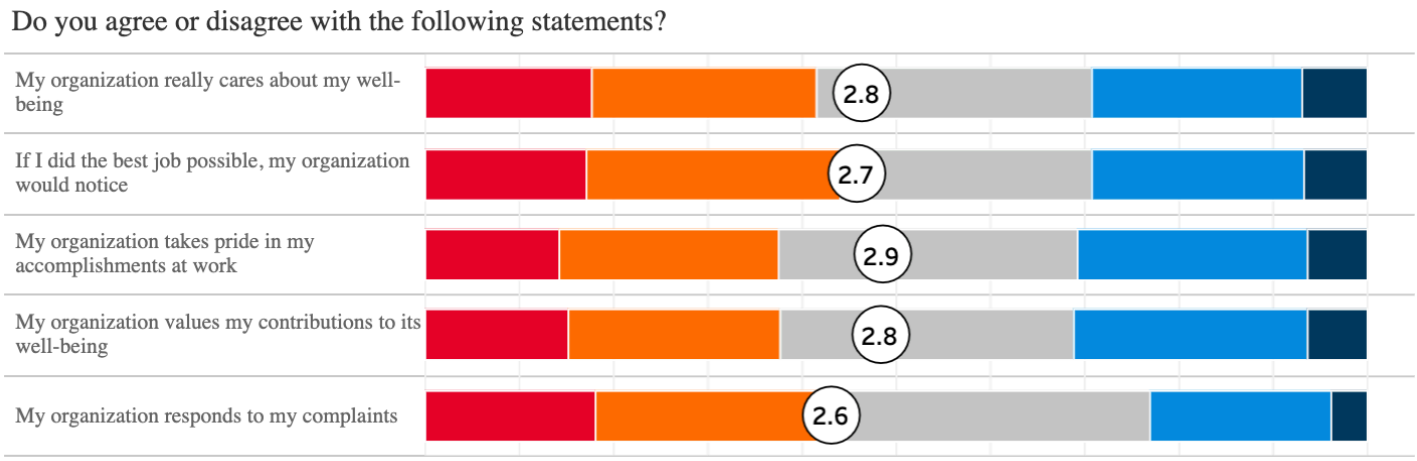


Figure 7 - Nurses indicate whether they agree or disagree to Survey of Perceived Organizational Support (SPOS) questions, Nov 2022

When analyzing the data by race or ethnicity, Latino nurses report the lowest perception of organizational support. They scored a 2.7 for "My organization takes pride in my accomplishments at work," compared to 3.1 for Asian respondents, 2.9 for Black respondents, and 2.9 for White respondents. As a group, Latino nurses have the lowest scores across the board, while Asian nurses report the best scores across all five SPOS measurements.

Younger nurses have the lowest SPOS scores

When analyzing the data by age, nurses 55 or older exceed the averages. Nurses 55 or older scored a 3.0 for "My organization values my contributions to its well-being." Compare this to 2.6 for nurses 25-34. Overall, nurses 25-34 presented the worst scores across all SPOS indicators, followed by nurses 35-44 and under 25. This is consistent with reported feelings, with younger nurses feeling less supported and less valued. The pivot towards higher SPOS scores begins with nurses 45-54, where all but one score matches the total population.

When analyzing the data by work setting, medium acute care hospitals (100-500 beds) are faring the worse, with all five SPOS measurements below average. Medium acute care hospitals are followed by large acute care hospitals (500+ beds) and long-term care facilities for reporting lower scores. The work settings with the highest scores are schools of nursing and community or public health facilities. Medium acute care hospitals scored a 2.6 for "My organization really cares about my well-being," compared to 3.1 for schools of nursing.

BURNOUT & INTENT REMAIN KEY ISSUES

Eighty-four percent of nurses say they are stressed or dealing with burnout. While there have been slight improvements in self-identified burnout scores, burnout is still severe among nurses. Nearly 50% reported feeling some level of burnout. Twenty-one percent reported feeling that they were beginning to burnout, 22% said they are burned out now, and 4% said they are completely burned out and may need help. An additional 36% of nurses reported feeling stressed.

When nurses were asked what contributes most to workplace burnout, the leading response was not enough staff to adequately do their job (38%). This was followed by lack of respect from employer (14%), too many administrative tasks (10%), and insufficient compensation (9%). When nurses were asked whether they believed their colleagues were coping better or worse with burnout, 4% said 'better,' 26% 'worse,' and 70% 'unsure.' For nurses under 35, a significantly higher 7% said that they believed other nurses to be coping better.

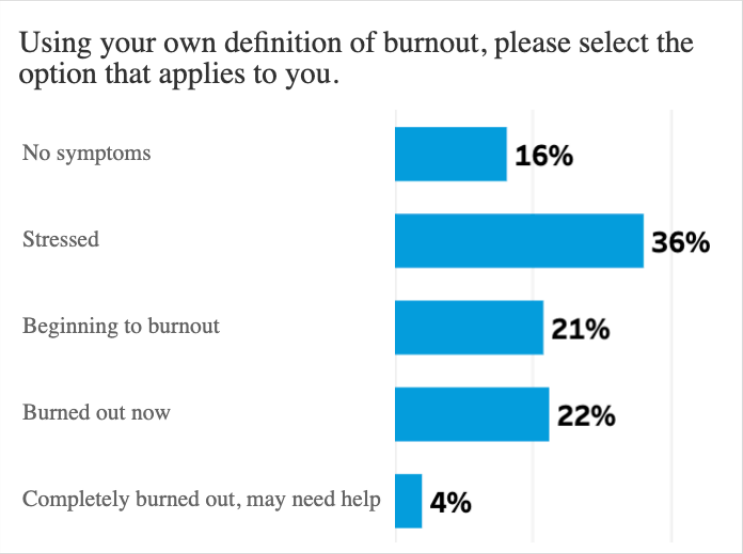
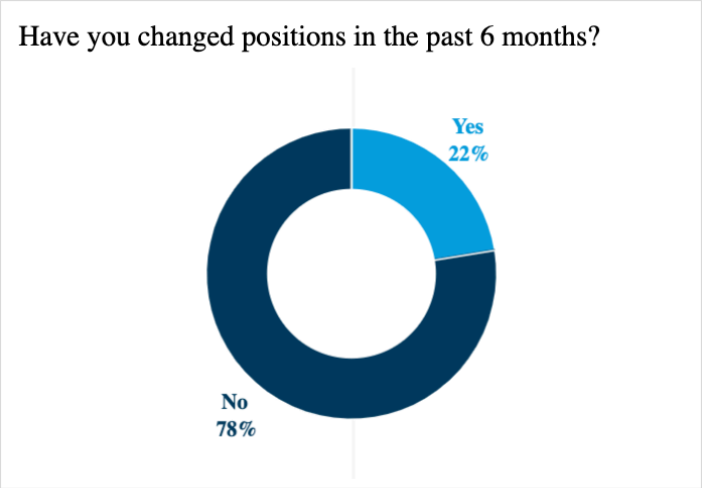


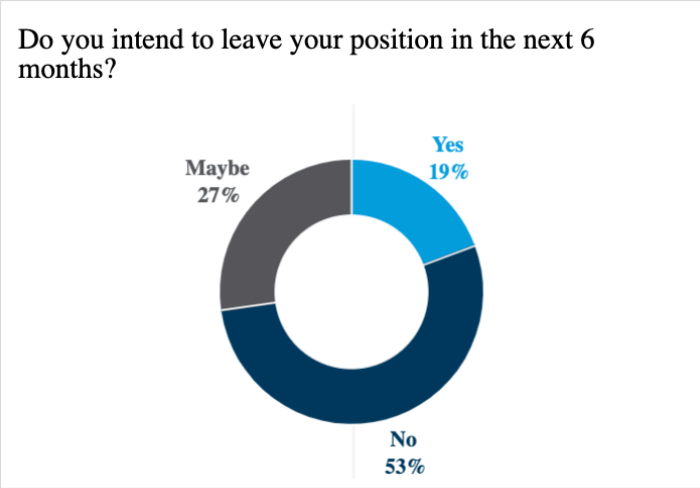
Figure 8 - Nurses indicate their level of burnout, Nov 2022

Looking back, 22% of nurses said they have changed positions in the past six months. Looking forward, 19% said they intend to leave their position in the next six months, and 27% are considering leaving. This is a 6% improvement compared to survey results one year ago. Of those who intend or are considering leaving their position, 13% said they plan to leave nursing altogether; 30% said they are considering it.

While results from this survey reveal some positive improvements, the situation remains critical by and large. One nurse shared, "I have seen more nurses recommend other career choices to friends and family. I have seen many caring people step aside from nursing, because they have found it is no longer worth it."

Another nurse echoed this sentiment, "The staffing shortage has gotten even worse and most of the medical staff currently working are burned out and ready to leave. It's hard to stay positive in this type of environment. I'm at the point where I want to leave nursing, but I am unable to because I'm supporting my family." The effects of burnout are far-reaching, and employers need to heed the warning.

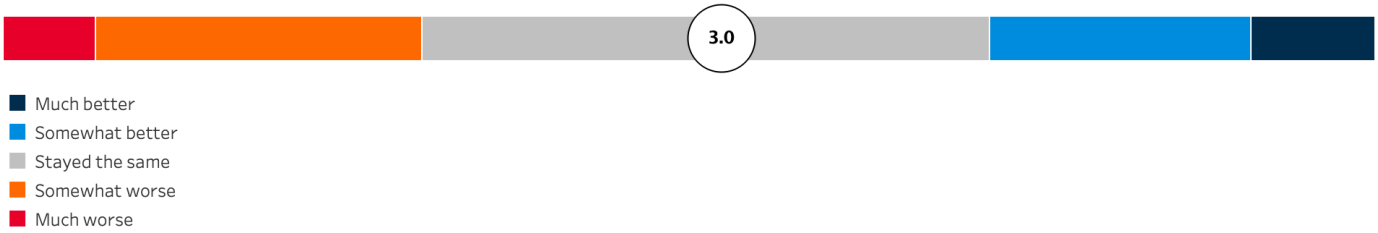




Figures 9 and 10 - Nurses indicate whether they left their position or will leave their position, Nov 2022

FINANCIAL WELL-BEING WORSENS, MANY HAVE CONCERNS ABOUT STUDENT LOANS

Financial well-being has worsened, dropping 3% from one year ago. Sixty-one percent of nurses surveyed described how they have managed their financial hardship by using savings or emergency funds (28%), delaying major purchases (27%), and relying more on credit cards (19%).



Figures 11 - Nurses indicate financial well-being, Nov 2022

To bridge the gap between growing tuition and stagnating wages, student loans have been increasingly obtained to cover the cost of education.[i] The result is that more and more newer nurses are entering the workforce with larger student loans. When asked about their level of concern with student loan debt, over one-third of nurses said they were either somewhat or very concerned. Those burdened by student loan debt were also asked whether they have the necessary information to take appropriate action. Nearly half said they did not have the information they needed to act. Notably, a statistically significant 57% of Black respondents reported being either somewhat or very concerned about their student loan debt, and a statistically significant 47% said they do not have the information to take appropriate action.

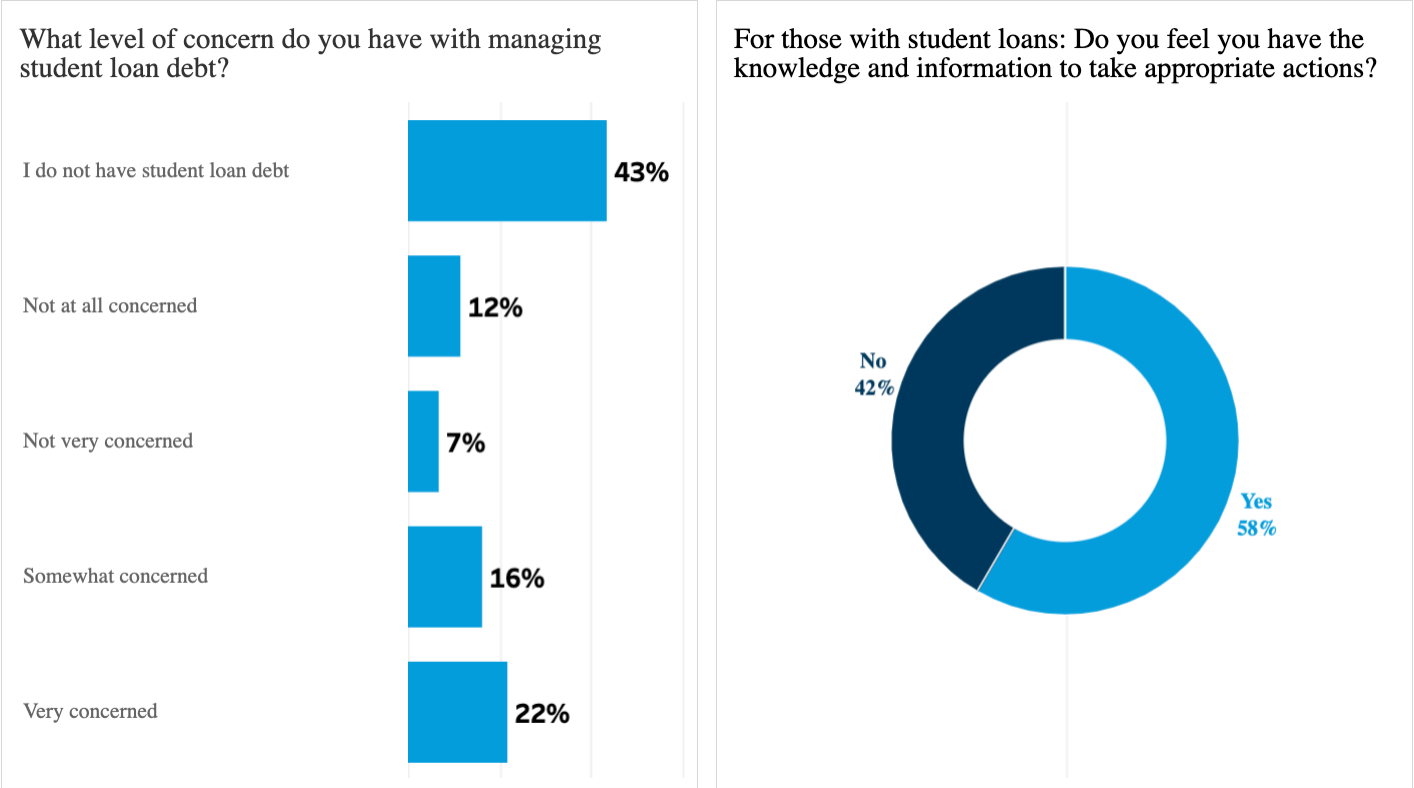


Figure 12 and 13 – Nurses' concern with student loan debt and whether they have information to take appropriate action, Nov 2022

MORE WORK-LIFE BALANCE TO IMPROVE WORK SATISFACTION

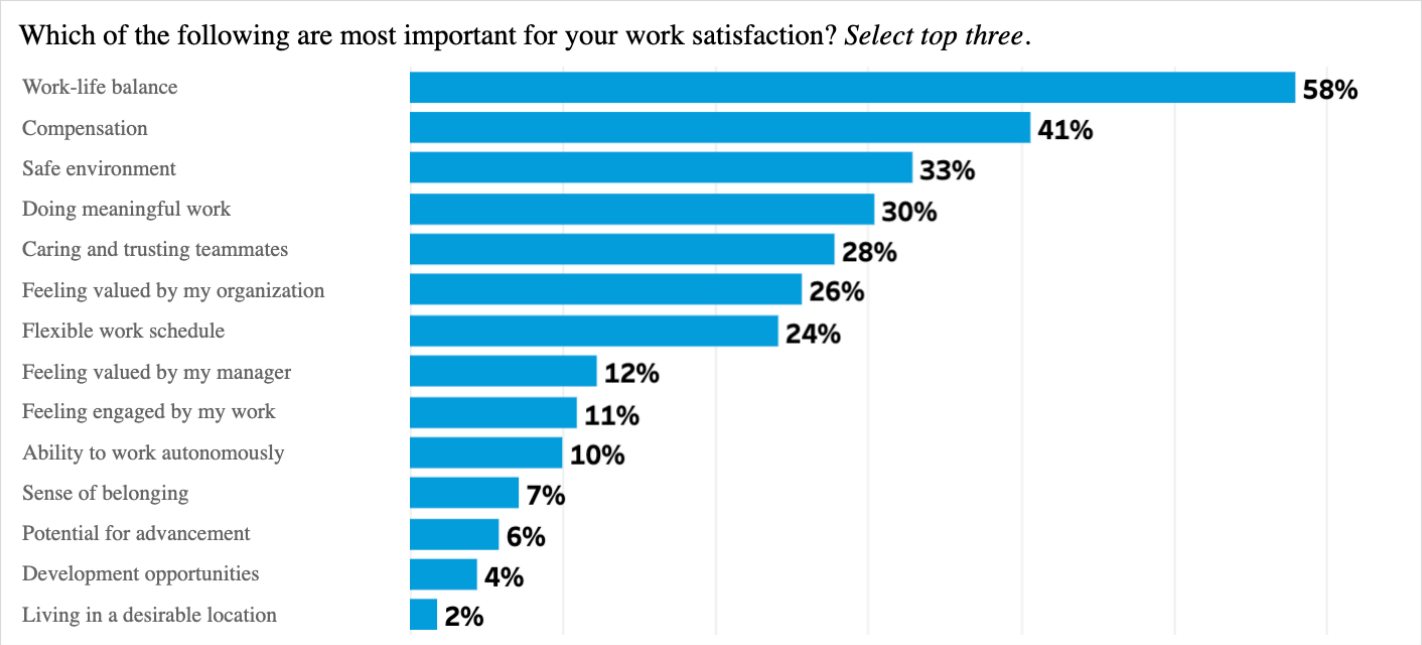


Figure 14 - Nurses indicate what is most important for their work satisfaction, Nov 2022

When nurses were asked what is most important for work satisfaction, work-life balance was the number one answer, selected by 58% of nurses, and by 63% of nurses under 35. Other important factors selected by nurses to improve their work satisfaction include compensation (41%), a safe work environment (33%), and doing meaningful work (30%).

When analyzing responses by age, there are findings that stand out statistically that could help organizations focus their efforts on developing a multi-generational approach to support. For nurses with less than 20 years' experience, work-life balance, compensation, potential for advancement, caring and trusting teammates, safe environments, flexible work schedules, and development opportunities were more important. For nurses with more than 20 years' experience, feeling valued by their manager, feeling valued by their organization, feeling engaged by their work, doing meaningful work, and the ability to work autonomously were more important. Note, these are statistically stronger for their respective age brackets and are not necessarily the leading choices for either.

GAPS IN WHAT NURSE LEADERS PERCEIVE AND NURSES EXPERIENCE

On top of the generational divide that is evident throughout the data, a gap persists between nurses and nurse leaders. This divide has real consequences that go beyond work culture. When nurses were asked whether they feel their team is better prepared for a future variant, surge, or pandemic, only 30% said 'yes,' with 29% 'maybe' and 41% 'no.' When compared to nursing leadership, the gap is considerable, if not alarming. When the same question was asked in an October 2022 survey fielded by the American Organization of Nursing Leadership (AONL), 65% of nurse leaders said 'yes,' they felt their team was better prepared for a future variant, surge, or pandemic.[ii]

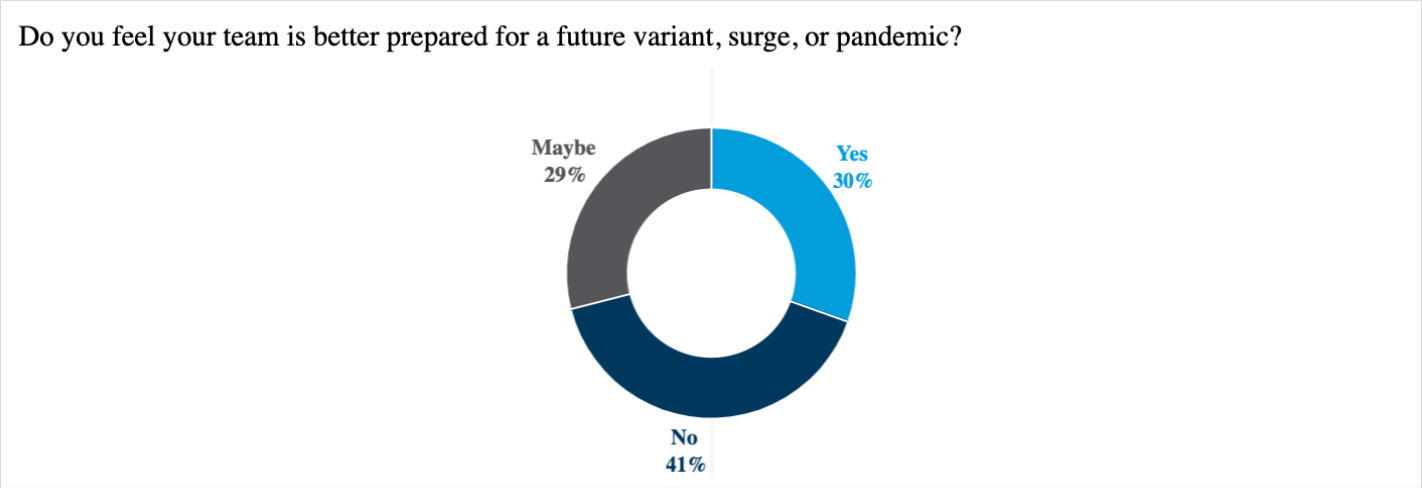


Figure 15 - Nurses indicate whether they feel their team is better prepared for a future variant, surge, or pandemic, Nov 2022

NURSES' WORKPLACES MUST CHANGE

The concern about clinician burnout – especially that of nurses – is a major issue in health care today. The U.S. Surgeon General's Advisory on Building a Thriving Health Workforce report noted that "Burnout is associated with risk of mental health challenges, such as anxiety and depression…. While addressing burnout may include individual-level support, burnout is a distinct workplace phenomenon that primarily calls for a prioritization of systems-oriented, organizational-level solutions."[iii]

Throughout this report, we see the effects of an under-supported nursing workforce. While individual nurses have reported modest improvements in their well-being, their faith in their workplaces has not improved. Now, three years into a global pandemic, nurses can no longer hold together a fragmented system, a system that historically undervalued its nurses while depending on their willingness to sacrifice.

Without addressing the concrete and daily obstacles that are driving nurses away from health care, such as employers refusing to hire enough nurses or provide them a safe environment in which to practice, the workforce will remain at risk. Significant financial investments need to be made to reimagine and reconstruct the care environment with nurses' frontline expertise driving decisions on improvement.

The American Nurses Foundation is committed to supporting nurses' individual needs through its Well-Being Initiative[iv] and the ANA Enterprises' Healthy Nurse Healthy Nation[v] program. While supporting their personal needs, the Foundation is also committed to providing nurses with resources to innovate[vi] and create organizational-level solutions.

From the voice of a nurse, "The pandemic revealed what nurses actually mean to the healthcare system and hospital operations. This was profoundly disillusioning, but ultimately strangely empowering. We all experienced so intensely how little we mean as individuals and how undervalued our work is. We saw so clearly what we were trained to accept as our due—which was very little—and how much was asked of us in return—which was too much. This destroyed trust in institutions that we had invested in. However, it also gave us the freedom to leave them, and to begin to demand more for ourselves either in the form of greater compensation, better benefits, or more flexibility and balance. I see nurses setting better boundaries for themselves and taking better care of themselves than ever before. We are powerful advocates, and the pandemic revealed all the ways we need to advocate for ourselves and each other."

[i] Webster, Patrick, and Sara E North. "Health Professions Educational Debt: Personal, Professional, and Psychological Impacts 5 Years Post-Graduation." *Frontiers in Medicine*, U.S. National Library of Medicine, 10 Feb. 2022, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8866662/.

[ii] "Longitudinal Nursing Leadership Insight Study." *AONL*, 2022, https://www.aonl.org/resources/nursing-leadership-covid-19-survey.

[iii] *Addressing Health Worker Burnout*. United States Department of Health and Human Services, 2022, https://www.hhs.gov/sites/default/files/health-worker-wellbeing-advisory.pdf.

[iv] *The Well-Being Initiative*. ANA Enterprise, 13 May 2020, https://www.nursingworld.org/practice-policy/work-environment/health-safety/disaster-preparedness/coronavirus/what-you-need-to-know/the-well-being-initiative/.

[v] *Healthy Nurse Healthy Nation.* ANA Enterprise, 2023, https://www.healthynursehealthynation.org/

[vi] *The Reimagining Nursing Initiative*. ANA Enterprise, 27 Apr. 2022, https://www.nursingworld.org/foundation/rninitiative/.

Examining the Impact of the COVID-19 Pandemic on Burnout and Stress Among U.S. Nurses

Brendan Martin, PhD; Nicole Kaminski-Ozturk, PhD; Charlie O'Hara, PhD; and Richard Smiley, MS

Background: The COVID-19 pandemic has amplified long-standing issues of burnout and stress among the U.S. nursing workforce, renewing concerns of projected staffing shortages. Understanding how these issues affect nurses' intent to leave the profession is critical to accurate workforce modeling. **Purpose:** To identify the personal and professional characteristics of nurses experiencing heightened workplace burnout and stress. **Methods:** We used a subset of data from the 2022 National Nursing Workforce Survey for analysis. Binary logistic regression models and natural language processing were used to determine the significance of observed trends. **Results:** Data from a total of 29,472 registered nurses (including advanced practice registered nurses) and 24,061 licensed practical nurses/licensed vocational nurses across 45 states were included in this analysis. More than half of the sample (62%) reported an increase in their workload during the COVID-19 pandemic. Similarly high proportions reported feeling emotionally drained (50.8%), used up (56.4%), fatigued (49.7%), burned out (45.1%), or at the end of their rope (29.4%) "a few times a week" or "every day." These issues were most pronounced among nurses with 10 or fewer years of experience, driving an overall 3.3% decline in the U.S. nursing workforce during the past 2 years. **Conclusion:** High workloads and unprecedented levels of burnout during the COVID-19 pandemic have stressed the U.S. nursing workforce, particularly younger, less experienced RNs. These factors have already resulted in high levels of turnover with the potential for further declines. Coupled with disruptions to prelicensure nursing education and comparable declines among nursing support staff, this report calls for significant policy interventions to foster a more resilient and safe U.S. nursing workforce moving forward.

Keywords: Workforce, burnout, stress, pandemic, COVID-19, nursing shortage

For decades, scholars have warned of looming nursing shortages across the United States, citing an aging workforce and long-standing issues of burnout and stress stemming from high patient-to-nurse ratios, low pay, and concerns regarding workplace safety. The surge in patient volume and acuity driven by the COVID-19 pandemic compounded many of these pre-existing issues. Simultaneously, prelicensure nursing education programs were forced to rapidly re-invent themselves in response to clinical site disruptions, potentially affecting the supply and clinical preparedness of new nurse graduates. This combination of factors has led to unprecedented levels of burnout among newly licensed and tenured nurses alike. We used a subset of data from the 2022 National Nursing Workforce Survey to identify potential indicators of stress and burnout among the current nursing workforce to better target resources, tailor solutions, and inform policy decision-making.

Background

The overall number of registered nurses (RNs) in the United States has steadily risen over the past decade (NCSBN, 2023; U.S. Bureau of Labor Statistics, 2022), but the number of employed RNs per capita in each state varies widely (U.S. Bureau of Labor Statistics, 2022; United States Census Bureau, 2022). Even within single jurisdictions, regional differences exist (Scheidt et al., 2021; NCSBN Environmental Scan, 2023). Long-standing concerns over nursing shortages existed prior to the pandemic (Buerhaus et al., 2007; Snavely, 2016; Marć et al., 2019), but COVID-19 appears to have accelerated this trend and exacerbated many pre-existing workforce issues (Haas et al., 2020), such as nurses' experiences of burnout and stress (Aiken et al., 2002; McHugh et al., 2011; Aiken et al., 2018). Emerging evidence suggests that between 22%–32% of the nursing workforce is actively considering retiring, leaving the profession, or leaving their current position in the near future (Smiley et al., 2021; Berlin, Lapointe, Murphy, & Wexler, 2022; Nurse.com, 2022; Smiley et al., 2023). Within specific subsets of the profession, such as critical care, the picture is even bleaker, with

an estimated 67% of nurses indicating that they plan to leave their current position in the next 3 years (Ulrich et al., 2022).

Although the COVID-19 pandemic has exacerbated many of these trends, it is often not the root cause of the problem, nor are the issues isolated to the United States. The main drivers of nurses' intent to leave are frequently identified as more durable issues or problems, such as insufficient staffing levels, desire for higher pay, not feeling listened to or supported at work, and the emotional toll of the job (Lasater et al., 2021; Galanis et al., 2021; Murat et al., 2021; Berlin, Lapointe, & Murphy, 2022). In fact, when ranked, McKinsey research found that financial considerations and plans to retire or return to school often played bigger roles in nurses' decision-making than the pandemic (Berlin, Essick, et al., 2022). Furthermore, scholars have found that intent to leave is typically influenced by a multitude of factors, including individual characteristics such as job satisfaction and frequency of experiencing "moral distress," and work environment characteristics, such as appropriate staffing, quality of care, safety, etc. (Aiken et al., 2022; Ulrich et al., 2022). Surveys have found that these experiences translate internationally as well, with substantial proportions of nurses in France, Singapore, Japan, and the United Kingdom indicating they also plan to leave direct care for many of the same reasons (Berlin, Essick, et al., 2022).

Fissures in the U.S. healthcare system were apparent from the start of the pandemic, with multiple reports identifying critical staffing shortages from the onset of COVID-19 (Spetz, 2020) and throughout surge events driven by variant strains of the virus (Office of the Assistant Secretary for Planning and Evaluation, 2022). Distressingly, emerging evidence suggests the pandemic has even stalled the decades-long workforce growth trend, with data now showing that a decline in the RN population by approximately 100,000 may be primarily due to a 4% dropoff in the number of RNs younger than 35 years (Auerbach et al., 2022). While it is not yet clear whether the trend of younger nurses pausing or leaving nursing "is a temporary or more permanent phenomenon" (Firth, 2022), there is reason for concern. Some researchers now project a gap of 200,000 to 450,000 nurses by 2025—a gap partly driven by a decreased supply of the absolute RN workforce but also amplified by increased in-patient demand from or related to COVID-19 and an aging population (Berlin, Essick, et al., 2022).

In addition, many healthcare facilities closed their doors to clinical experiences to reduce the spread of COVID-19 and preserve their limited supplies of personal protective equipment early in the pandemic (Dewart et al., 2020). As a result, many prelicensure nursing programs faced enormous difficulty in securing traditional in-person clinical placements, directly affecting the supply and preparedness of new nurse graduates (Emory et al., 2021; Lanahan et al., 2022). In response, most nursing programs shifted their face-to-face lectures to online platforms and their traditional clinical placements to simulation-based and virtual simulation-based experiences (Benner, 2020; *Innovations in Nursing Education*, 2020; Kaminski-Ozturk & Martin, 2023; Martin et al., 2023). The scope and speed of this pivot presented particular challenges for faculty and administrators in the health professions, as the rapid development and implementation of online and simulated curricula often ran counter to their own academic training (Booth et al., 2016; Seymour-Walsh et al., 2020). Despite many challenges (Michel et al., 2021; Smith et al., 2021), some evidence suggests prelicensure nursing students maintained learning outcomes (Konrad et al., 2021). However, others have documented the need for more hands-on training and the frustration of new nurse graduates over the apparent mismatch between their clinical experiences and their role entering the clinical setting during a global health crisis (Crismon et al., 2021; Emory et al., 2021; Bultas & L'Ecuyer, 2022; Lanahan et al., 2022).

Taken together, the U.S. nursing workforce is at a critical crossroads (NCSBN, 2023). To better inform and target policy solutions with the goal of fostering a more sustainable workforce, we analyzed a subset of data from the 2022 National Nursing Workforce Survey to address two primary research questions:

1. What are the personal and professional characteristics of nurses experiencing heightened workplace burnout and stress?
2. How do nurses' experiences of burnout and stress inform their intent to leave the profession?

Methods

Survey Sample

All RNs, advanced practice registered nurses (APRNs), and licensed practical nurses/licensed vocational nurses (LPNs/LVNs) with an active license in the United States and its territories were eligible to be survey participants. The bulk of the sample was drawn from Nursys, NCSBN's licensure database. This database contains basic demographic and licensure information for RN and LPN/LVN licensees. For Georgia, the licensee list and addresses were purchased directly from Medical Marketing Service, Inc. Separate RN and LPN/LVN samples were drawn at random and stratified by state. As nurses can hold multiple single-state licenses, an initial review of all data was undertaken to de-duplicate license counts for individual practitioners by assigning licensees a single home state based on primary address.

Study Design

The core of the National Nursing Workforce Survey is comprised of the National Forum of State Nursing Workforce Centers' Nurse Supply Minimum Data Set, which was approved in 2009 and updated in 2016 (The National Forum of State Nursing Workforce Centers, 2016). However, the survey instrument also includes several custom items for a total of 39 questions across the following six domains: (1) COVID-19 Pandemic; (2) License Information; (3) Work Environment; (4) Telehealth; (5) Nurse Licensure Compact; and (6) Demographics. Items specific to respondents' experiences during the COVID-19 pandemic and work as travel nurses during the past 2 years were added for the 2022 cycle. The survey

was initially fielded on April 11, 2022, via direct mail outreach in partnership with Scantron, a leader in assessment and technology solutions, and hosted online via Qualtrics (Provo, UT). The survey remained open for approximately 6 months, with two scheduled mail reminders at weeks 10 and 20 and regular weekly email reminders for online surveys. A comprehensive overview of the survey methods, including the sampling strategy, and detailed national results will be available in a forthcoming publication of the 2022 National Nursing Workforce Survey as a supplement to the *Journal of Nursing Regulation*. Prior to commencing any outreach, the study was approved by the Western Institutional Review Board.

Dependent and Independent Variable Coding

The Maslach Burnout Inventory-Human Services Survey (MBI-HSS) is a reliable, and valid survey instrument comprising three domains: Emotional Exhaustion, Depersonalization, and Personal Accomplishment (Maslach et al., 1997). Nurses completing the 2022 National Nursing Workforce Survey were asked to complete 5 Likert-scale items originating from the Emotional Exhaustion domain, which has a Cronbach's alpha of .90 (Iwanicki & Schwab, 1981; Gold, 1984). Respondents were asked to indicate how frequently they feel emotionally drained, used up, fatigued, burned out, or at the end of their rope using a seven-point scale, where 1 meant "never" and 7 meant "every day." After a review of the distribution of raw responses and to simplify interpretation, each dependent variable was collapsed to identify and isolate respondent characteristics that aligned with a reported frequency of "a few times a week" (6) or "every day" (7). In addition, for the primary independent variable (years' experience), receiver operator characteristic (ROC) curves were generated for each of the five included outcomes to identify, as possible, a general inflection point at which respondents' sentiments appeared to consistently shift regarding experiences or drivers of burnout and stress. In aggregate, this cut point emerged at approximately 9 to 10 years of experience, so 10 years was selected to simplify the analysis and readers' interpretation of the results.

Data Analysis

A descriptive summary of the sample includes counts and proportions for categorical variables, while continuous variables are expressed as means and standard deviations or medians and interquartile ranges (IQR), as appropriate. For most descriptive measures, there was minimal variation by license type, so sample-based estimates are reported. Where notable differences emerged, they are presented. Univariable and multivariable binary logistic regression models were used to compare respondents' experiences of stress or burnout. An alpha error rate of $p \leq .05$ was considered statistically significant and all analyses of structured survey items (e.g., fixed-item, check all that apply, etc.) were conducted using SAS version 9.4 (Cary, NC).

Analysis of unstructured data was performed using the Natural Language Toolkit (Bird et al., 2009) and gensim (Řehůřek & Sojka, 2010) packages in Python 3.10. Data were first pre-processed, removing punctuation, numbers, and stop words (domain general and domain specific). Common bigrams, trigrams, and quadgrams were identified. Frequently used abbreviations and their fully spelled-out forms were also collapsed, and word tokens were lemmatized using the WordNet Lemmatizer. To extract recurrent themes identified in the responses, a Latent Dirichlet Allocation (LDA) probabilistic model (Blei et al., 2003) was employed.

The LDA model assumes there are a set number of latent topics—where a topic is a probability distribution across words found in the dataset—and each individual response has its own probability distribution across these latent topics. The LDA model can generate a response by sampling a topic based on the response's probability distribution and then sampling a word based on the probability distribution of that topic. The model searches across possible topics to maximize the likelihood of generating the observed dataset. These topics group words that are commonly used together. LDA models were run using gensim for a range of topics; in the present article, we chose to use five-topic models because they performed better on the U Mass Coherence metric than models with other topic thresholds (Mimno et al., 2011). Because coherence metrics do not necessarily align with coherence as observed by humans, several five-topic models were evaluated and compared for final inclusion. An alpha error rate of $p \leq .05$ was considered statistically significant, and all analyses were conducted using the scipy.stats package (Virtanen et al., 2020) in Python.

Results

Sample Summary

A total of 54,025 respondents across 45 states were included in the sample. The sample was roughly evenly divided between RNs (50.0%, n = 26,749) and LPNs/LVNs (45.0%, n = 24,061), with APRNs (5.0%, n = 2,723) constituting a smaller subset. Respondents were on average 51 years old (M: 51.4, SD: 14.4) and reported a median of 19 years of experience (IQR: 9–34), with minimal variation by license type. A majority of respondents self-identified as female (92.5%, n = 48,546), non-Hispanic (95.%, n = 49,465), and White (79.9%, n = 41,728). In general, LPNs/LVNs tended to be more racially diverse (75.2% White) compared to RNs (82.5%) and APRNs (85.8%). While most respondents reported full-time employment in nursing (66.3%, n = 35,382), only 4.6% (n = 2,006) indicated they engaged in travel nursing. APRNs reported the highest rate of full-time employment (75.7%), while the full-time employment rates among LPNs/LVNs (66.3%) and RNs (65.7%) were more comparable. The median reported salary for LPNs/LVNs was $50,000 (IQR: $38,000–$60,000) compared to $75,000 (IQR: $58,000–$95,000) for RNs and $110,000 (IQR: $87,500–$140,000) for APRNs.

More than half of the sample (62.0%, weighted n = 3,002,301) reported an increase in their workload during the COVID-19 pandemic. Similarly, high proportions reported feel-

TABLE 1

Descriptive Summary for Respondents Who Reported a Frequency of "A Few Times a Week" or "Every Day" Across Each Emotional Exhaustion Outcome

	Emotionally Drained	Used Up	Fatigued	Burned Out	End of Rope
License Type					
LPN/LVN	48.1% (10,774)	52.9% (11,770)	47.3% (10,532)	41.9% (9,328)	27.7% (6,154)
RN	48.6% (12,169)	54.5% (13,584)	47.5% (11,845)	42.6% (10,613)	27.8% (6,922)
APRN	45.3% (1,196)	50.3% (1,328)	40.5% (1,070)	36.5% (962)	20.9% (550)
Years' Experience					
≤10 y	53.4% (7,400)	59.8% (8,258)	53.8% (7,444)	47.3% (6,552)	30.3% (4,182)
11+ y	44.7% (13,568)	49.7% (15,024)	42.7% (12,903)	38.5% (11,640)	25.3% (7,628)
Travel Nurse					
No	47.8% (19,537)	53.3% (21,711)	46.6% (19,026)	41.0% (16,710)	26.2% (10,649)
Yes	59.8% (1,192)	65.1% (1,290)	60.1% (1,195)	54.4% (1,079)	37.2% (739)
Increased Workload					
No	30.4% (5,663)	35.5% (6,572)	30.7% (5,697)	27.1% (5,021)	17.6% (3,255)
Yes	59.1% (18,238)	64.6% (19,836)	57.0% (17,519)	51.0% (15,681)	33.4% (10,247)
Direct Patient Care					
No	44.0% (5,200)	48.3% (5,682)	41.7% (4,910)	36.9% (4,345)	23.4% (2,758)
Yes	50.0% (15,578)	56.0% (17,380)	49.4% (15,354)	43.4% (13,487)	27.9% (8,646)

Notes. APRN = advanced practice registered nurse; LPN/LVN = licensed practical nurse/licensed vocational nurse; RN = registered nurse. Data presented as unweighted % (*n*). Dependent variables were collapsed to identify and isolate respondent characteristics that align with a reported frequency of "a few times a week" or "every day" across each of the five outcomes.

TABLE 2

Multivariable Results for Respondents Who Reported a Frequency of "A Few Times a Week" or "Every Day" Across all Outcomes

Years' Experience | Increased Workload Interaction[a]	Emotionally Drained	Used Up	Fatigued	Burned Out	End of Rope
≤10 y |Yes	All $p < .001$	All $p < .001$	All $p < .001$	All $p < .001$	All $p < .001$
≤10 y | No (*Ref*)	3.13 (2.85, 3.43)	2.93 (2.68, 3.21)	2.67 (2.44, 2.93)	2.77 (2.52, 3.04)	2.47 (2.21, 2.76)
11+ y |Yes (*Ref*)	1.13 (1.07, 1.20)	1.18 (1.11, 1.25)	1.23 (1.16, 1.31)	1.18 (1.11, 1.25)	1.10 (1.03, 1.17)
11+ y | No (*Ref*)	4.14 (3.85, 4.45)	4.23 (3.93, 4.54)	3.86 (3.59, 4.15)	3.66 (3.40, 3.94)	3.10 (2.84, 3.38)

Note. Ref = reference. Multivariable model *n* ranges from 29,941 to 30,060 observations across all five dependent variables. Dependent variables were collapsed to identify and isolate respondent characteristics that align with a reported frequency of "a few times a week" or "every day" across each of the five outcomes. Results presented as odds ratios and 95% confidence intervals.

[a] In addition to years' experience and increased workload, each model further adjusted for respondents' self-reported sex, ethnicity, race, salary, and license type, as well as indicators for full-time nurse employment, direct patient care, and travel nurse designation.

ing emotionally drained (50.8%, weighted n = 2,352,775), used up (56.4%, weighted n = 2,601,572), fatigued (49.7%, weighted n = 2,296,545), burned out (45.1%, weighted n = 2,080,380), or at the end of their rope (29.4%, weighted n = 1,353,809) "a few times a week" or "every day." Nurses with 10 or fewer years of experience consistently reported a 28% to 56% increase in their frequency of feeling emotionally drained (*OR*: 1.41, 95% CI: 1.36–1.47), used up (*OR*: 1.50, 95% CI: 1.44–1.56), fatigued (*OR*: 1.56, 95% CI: 1.50–1.63), burned out (*OR*: 1.43, 95% CI: 1.38–1.49), or at the end of their rope (*OR*: 1.28, 95% CI: 1.23–1.34) compared to their more experienced counterparts (all $p < .001$, Table 1). Nurses who reported an increased workload during the pandemic displayed a similar pattern: emotionally drained (*OR*: 3.31, 95% CI: 3.19–3.44), used up (*OR*: 3.32, 95% CI: 3.19–3.45), fatigued (*OR*: 2.99, 95%

TABLE 3

Free Response Topics and Keywords

Subjective Topic	% (*n*) of Responses	Keywords	Representative Response[a]
COVID-19 Stress	20.2% (3,783)	home, covid, working, worked, resident, people, clinic, job, vaccine, agency, stressful, forced, family, mask, hospital, vaccination	During COVID-19, homecare nursing was never addressed as a high risk job. Paramedics, hospital staff, and other essential workers seem to get addressed and considered for vaccines but I was told by my physician that I was not eligible for the vaccine when it came out. It was and still is like playing Russian roulette going into patients' homes, not knowing if they have been exposed or not. PPE equipment was not always available, and every assisted living facility had different rules for homecare to follow.
Unsafe Staffing/ Work Environment	23.2% (4,338)	staff, covid, stress, pandemic, short, staffing, anxiety, med, load, covid-19, always, leaving, regulation, increased, short staffed, ratio, facility, heavy, mandated, supply, burnout, job	The amount of extra work I have been required to perform at work without financial compensation is outstanding. My working environment is unsafe for both staffing and lack of security. There have been many times I thought I was in danger or a patient was in danger. These situations have led to me having anxiety and even full-blown panic attacks every morning when I clock in. I am terrified for my own safety, as well as for the patients I see every day.
Underappreciated	22.6% (4,219)	feel, management, underpaid, overworked, administration, employer, shortage, underappreciated, support, under appreciated, burned out, burnout, lack, respect, feeling,	It isn't the job, it is the lack of respect from everyone, especially when it comes from patients/clients and/or their support groups. I believe that there are fewer and fewer people wanting to be in healthcare due to the demands of what it takes to care for others. So when there are less people taking care of others as a healthcare professional, it puts more pressure and demands on a limited workforce.
Retirement/Career Change	16.5% (3,086)	retired, license, burnout, 2020, busy, part time, back, stress, tired, shift, job, years ago, pandemic, illness, breathing, covid, exercise	I am retired and a widow. I'm active in church and help with my grandkids. I keep my LPN license because who knows. It would have to be light and low stress to return.
Compensation	17.5% (3,275)	pay, increased, increase, load, paid, enough, workload, short_ staffing, wage, staff, raise, staffing, poor, short_staffed, job, travel, incentive, too much, salary, ethic, stress, burnout, decreased, rate, money, need, ratio	Burn out, short staffed, not enough pay, and yet they want to cap nurses on wages, but you don't see them capping physician pay or lawyer pay.

[a] Responses were lightly edited for punctuation and journal style.

CI: 2.88–3.11), burned out (*OR*: 2.80, 95% CI: 2.70 – 2.92), or at the end of their rope (*OR*: 2.35, 95% CI: 2.25–2.46) (all p <.001). Consistent univariable patterns also emerged by license type (RN, LPN/LVN vs. APRN), for those providing direct patient care, and for those who reported engaging in travel nursing (all p < .001). Trends related to years' experience and increased workload held on multivariable analysis after further adjustments for respondents' self-reported sex, ethnicity, race, salary, and license type, as well as indicators for full-time nursing employment, direct patient care, and travel nurse designation. Furthermore, a meaningful interaction between years of experience and increased workload emerged. Nurses with 10 or fewer years of experience who also reported an increased workload during the pandemic were between two and a half to more than three times more likely to report higher frequencies of feeling emotionally drained, used up, fatigued, burned out, or at the end of their rope compared to similarly inexperienced nurses with normal workloads (all p < .001, Table 2). Even compared to more experienced nurses with comparable workloads, early career respondents with high workloads still reported a 10% to 23% increase in feeling emotionally drained, used up, fatigued, burned out, or at the end of their rope (all p < .001). The most pronounced differences emerged when comparing early career nurses with higher workloads to their more experienced peers with normal workloads. In this comparison, early career respondents with high workloads were more than three to four times more likely to report higher frequencies of feeling emotionally drained, used up, fatigued, burned out, or at the end of their rope (all p < .001).

Free-Response Analysis

Subjective characterizations were developed for each of the five topics included in the results (Table 3). This was achieved in two ways: first, by analyzing the set of words that were most frequent and salient for each topic, and, second, by identifying the 15 most representative survey responses. Topic 1, labeled COVID-19 stress, typically involved acute stressors relevant to the pandemic, ranging from both anti-vaccination and anti-public health intervention sentiments to more commonplace concerns about PPE shortages, vulnerability to COVID-19 infection, and long-haul infections. Topic 2 was characterized by stressors that may have predated but ultimately were exacerbated by the pandemic, such as staffing shortages, unsafe work environments, and workplace violence. Topic 3 was represented by more emotional responses, including respondents' sense of feeling underappreciated and disrespected by patients and superiors. Responses that scored high for Topic 4 were focused on retirement and other types of career change, usually with the sentiment that stress and burnout were bad, but now that the respondent was no longer working in that environment, it was much better. Finally, Topic 5 was predominantly characterized by complaints about compensation levels.

There was fair saturation across all five topics based on respondents' license types (Figure 1). However, select themes appeared to resonate more with certain groups. For example, discussion of compensation was more common among APRNs, while unsafe staffing and work environments appeared more often in RNs' narrative accounts, as did issues related to retirement or career change. Stress related to COVID-19, including both workplace and personal concerns, was more concentrated among LPNs/LVNs. Across all groups, issues related to feeling underappreciated emerged.

When compared against respondents' years of work experience, even clearer patterns emerged, providing valuable interpretative context (Figure 2). There was a significant and positive linear relationship between reported years' experience and topics one and four. In other words, more experienced nurses were more likely to self-report higher levels of burnout and stress specifically due to the pandemic and were more likely to share free-text comments regarding retirement or career change as a result. By contrast, an inverse relationship emerged between years of experience and topics two, three, and five. Thus, less experienced nurses, in particular those with <5 years' experience, but also 5 to up to 15 years experience, were most likely to report unsafe staffing or work environments and feeling underappreciated. This less experienced cohort was also significantly more likely to raise concerns regarding compensation levels as well. Although these topics also emerged among more experienced nurses, they were significantly less pronounced.

FIGURE 1

Free-Response Topics by License Type

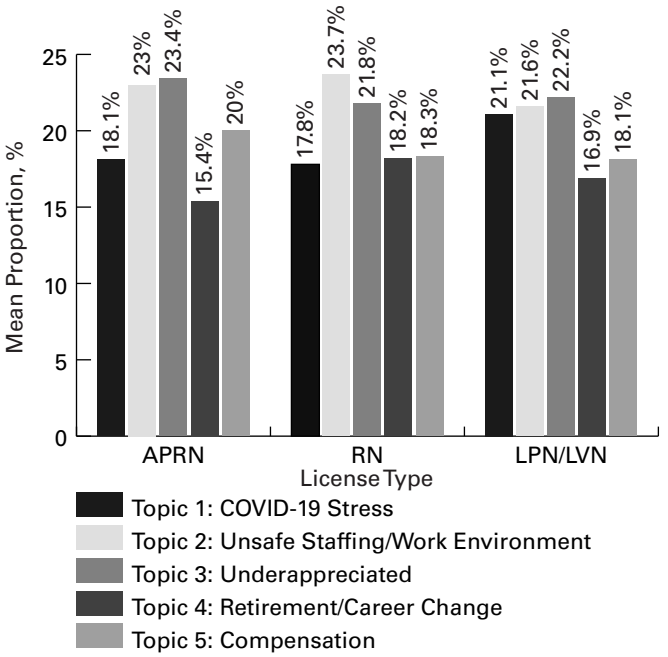
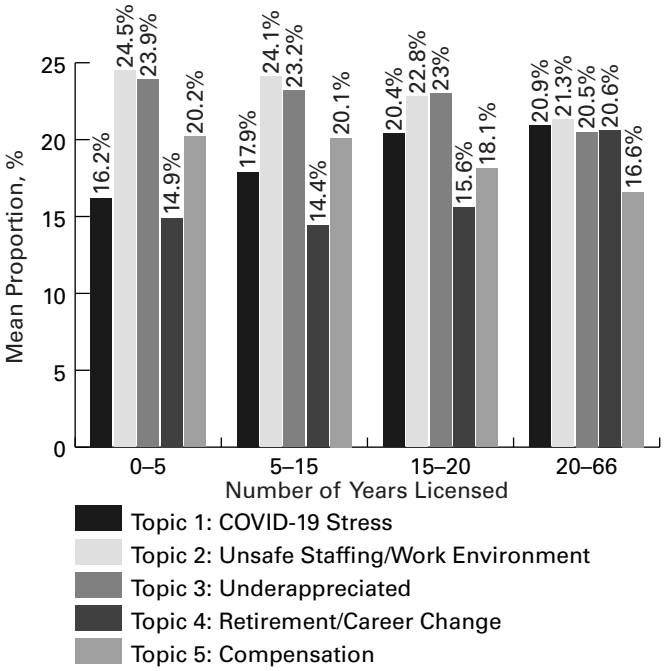


FIGURE 2

Free-Response Topics by Years' Experience



Discussion

The U.S. nursing workforce is at a critical crossroads (NCSBN, 2023). Many of the problems currently confronting the nursing profession long predated the global health crisis (Aiken et al., 2022). Nonetheless, the COVID-19 pandemic has amplified these concerns, and current evidence has identified unprecedented levels of stress and burnout among the key factors driving high rates of pro-

jected turnover (Berlin, Lapointe, Murphy, & Wexler, 2022; Nurse.com, 2022; Smiley et al., 2021; Smiley et al., 2023). In this large, nationally representative survey of licensed nurses, approximately 50% of respondents reported feeling emotionally drained (50.8%), used up (56.4%), fatigued (49.7%), or burned out (45.1%) "a few times a week" or "every day." More than a quarter of the workforce also reported feeling at the end of their rope (29.4%) at a similar frequency. This analysis confirms some of the potential drivers of these trends, such as significant increases in nurses' workload during the pandemic (62%). However, even more importantly, it provides critical contextual evidence to better understand implications for the U.S. nursing workforce moving forward. Specifically, the findings illustrate a differential but equally meaningful impact of the COVID-19 pandemic on both ends of the experience spectrum, particularly among RNs. Furthermore, this report links such developments to simultaneous disruptions to traditional prelicensure nursing education models and comparable shortfalls among the supply of support workers (LPNs/LVNs). In doing so, this report seeks to inform policy aimed at fostering a more sustainable and safe U.S. nursing workforce.

In line with emerging evidence (Lasater et al., 2021; Galanis et al., 2021; Murat et al., 2021; Berlin, Lapointe, & Murphy, 2022), issues that often predated the pandemic, such as insufficient staffing levels, unsafe work environments, desire for higher pay, and not feeling appreciated emerged as concrete drivers of stress and burnout among respondents to this national survey. The findings of this study confirm that these concerns have been felt most acutely by less experienced nurses. RNs (+20%) and LPNs/LVNs (+16%) with 10 or fewer years of experience were significantly more likely to report an increased workload during the pandemic compared to their more experienced peers, leading to higher rates of reported burnout and stress ($p < .001$ across all outcomes). In the past 2 years, this has resulted in a net decline of 3.3% of the nursing workforce across all levels. Although the the RN workforce decline is a bit lower (2.7%), the absolute decline in frontline RNs is striking. In 2022, a nationally weighted estimate of 97,312 RNs reported they left nursing during the COVID-19 pandemic. Alarmingly, RNs with 10 or fewer years of experience, who were a mean age of 36 (SD: 10.3) years, left at an even faster pace (3%) and accounted for nearly 41% of the total dropoff in practicing RNs (39,785). These trends mirror findings from the Current Population Survey, which was sponsored jointly by the United States Census Bureau and the U.S. Bureau of Labor Statistics (Auerbach et al., 2022).

Disconcertingly, a high proportion of RNs with 10 or fewer years' experience also reported they planned to leave nursing in the next 5 years (15.2%). If this were to come to pass, it would result in a net decline of an additional 188,962 RNs (nationally weighted estimate) currently younger than 40 years. Although it is not yet clear if the trend will hold (Firth, 2022), these results align with McKinsey research, which projected a gap of 200,000 to 450,000 nurses in the United States by 2025 (Berlin, Essick, et al., 2022). Again, increased workload emerged as a potential driver of this trend in this analysis (*OR*: 1.35, 95% CI: 1.15–1.58, $p < .001$). Furthermore, these results are compounded by the emergence of a dumbbell distribution in the findings, which suggest that stress directly linked to the pandemic is simultaneously driving a high proportion of RNs with more than 10 years of work experience and a mean age of 57 (*SD*: 11.7) years to consider leaving their position or retiring in the next 5 years (44.8%, 610,388). This is on top of the 50,009 RNs (weighted national estimate) with more than 10 years of experience who reported they already left nursing due to the pandemic.

Against this backdrop, traditional support and re-supply apparatuses (e.g., LPN/LVNs and new nurse graduates) appear less resilient than they once were. On one hand, prelicensure nursing education programs have faced considerable and somewhat unprecedented disruptions (Benner, 2020; Dewart et al., 2020; *Innovations in Nursing Education*, 2020; Kaminski-Ozturk & Martin, 2023; Martin et al., 2023). This has, in turn, spurred concerns regarding the supply and clinical preparedness of new nurse graduates. On the other hand, this report confirmed comparable declines (4.2%) among nursing support staff, which resulted in 33,811 fewer LPNs/LVNs (weighted national estimate) in the U.S. nursing workforce compared to the start of the pandemic. Paired with documented trends among currently licensed RNs, and absent some form of intervention, these combined results raise considerable concerns regarding the resilience of the U.S. nursing workforce moving forward.

Limitations

Despite a large and geographically diverse respondent pool, we were not able to capture pandemic-related feedback from respondents in five nursing jurisdictions due to our sampling method. That may somewhat limit our ability to generalize our findings to nurses in Missouri, Wyoming, New Mexico, North Carolina, and Washington. Furthermore, nationally weighted estimates associated with projected intent to leave represent a potential loss in the number of licensed nurses. As some nurses hold multiple licenses and indeed practice across state lines, there is a possible multiplicative effect associated with the potential attrition. Combined with the state sample limitation, it is likely the projections shared in this report are conservative regarding the scale of any future loss. In addition, the LDA model defines topics via word co-occurrence relationships, but it has no direct understanding of semantic or contextual information, and it is equally unable to capture semantic connections as elements of respondent dialect and/or style. Given that respondent demographics might influence a respondent's word choice (e.g., older respondents may choose to use different words than younger respondents), it is possible that the topics discovered here may be influenced simply by how different respondent groups talk about burnout. Finally, the quantitative trends documented in this study are correlational and do not support causal inference.

Conclusion

High workloads and unprecedented levels of stress and burnout during the COVID-19 pandemic have strained the U.S. nursing workforce. This has already resulted in high levels of turnover during the past 2 years among younger, less experienced nurses. In parallel, disruptions to prelicensure nursing education coupled with comparable declines among nursing support staff suggest the U.S. nursing workforce may be at a critical juncture. This report serves to confirm and quantify projected trends that have recently begun to emerge in the literature, but it also provides critical contextual evidence to better understand implications for the nursing workforce moving forward. Should some of the projections derived from this analysis and mirrored by government data and market research come to pass, the outlook for the U.S. healthcare system could be dire. Fortunately, projected intent to leave or retire is not static but rather a manipulable outcome depending on policymakers' future decisions. This work seeks to inform debates on future workforce policy and, in doing so, better target resources and tailor solutions aimed at fostering a more sustainable and safe U.S. nursing workforce.

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Brendan Martin, PhD, is Director, Research Department, National Council of State Boards of Nursing (NCSBN), Chicago, Illinois. **Nicole Kaminski-Ozturk, PhD,** is a Research Scientist, Research Department, NCSBN. **Charlie O'Hara, PhD,** is a Data Scientist, Research Department, NCSBN. **Richard Smiley, MS,** is a Senior Statistician, Research Department, NCSBN.

Corresponding Author: Brendan Martin, bmartin@ncsbn.org

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How Inadequate Hospital Staffing Continues to Burn Out Nurses and Threaten Patients

New Penn Nursing Study Finds COVID-19 Pandemic Outcomes Were Worse at Hospitals with Prior Years of Poor Staffing Policies

January 9, 2023 By: Hoag Levins

A new University of Pennsylvania study details how the high levels of nurse burnout during the pandemic speak to the depth of inadequate nurse staffing policies prior to the pandemic. (Photo: Sharon Dominick)

The largest repeated survey ever done of registered nurses aggregated by their employers provides new insights into the severity of nursing burnout and related poor patient outcomes

during COVID-19. It characterizes the catastrophic workplace situations of the pandemic as the inevitable outcome of long years of inadequate staffing policies prior to the pandemic.

Conducted by the University of Pennsylvania School of Nursing's Center for Health Outcomes and Policy Research (CHOPR), the survey polled more than 70,000 licensed registered nurses in New York and Illinois just before COVID-19 hit and 18 months later as the pandemic approached its zenith in the United States. The study is entitled "A Repeated Cross-Sectional Study of Nurses Immediately Before and During the COVID-19 Pandemic: Implications for Action."

Linda Aiken, PhD, RN, FAAN

"Going back to pre-pandemic hospital working conditions will not solve the continuing disruptions in hospital care that have persisted even as the pandemic has ebbed," said lead author and LDI Senior Fellow Linda Aiken, PhD, RN, FAAN. "Transformational improvements in hospital nurse staffing and clinical work environments are needed to stabilize the hospital nurse workforce and provide safe patient care." Aiken is a Professor of Nursing and Sociology and CHOPR's Founding Director.

Insider Reports

The study asked nurses to report on working conditions, staffing adequacy, administrative policies directly affecting care delivery, patient outcomes, infection prevention practices, and management's demonstrated priority for patient safety. While not likely to surprise hospital insiders, the survey's findings might shock the general public who spent so much time during the last two years hailing health care facilities as heroic places and their nurses as the most trusted category of professional workers.

In their survey responses, over 69% of hospital nurses across both states cited a lack of confidence in hospital management to resolve clinical care problems reported by nurses before the pandemic. During the pandemic that lack of confidence rose to 78%.

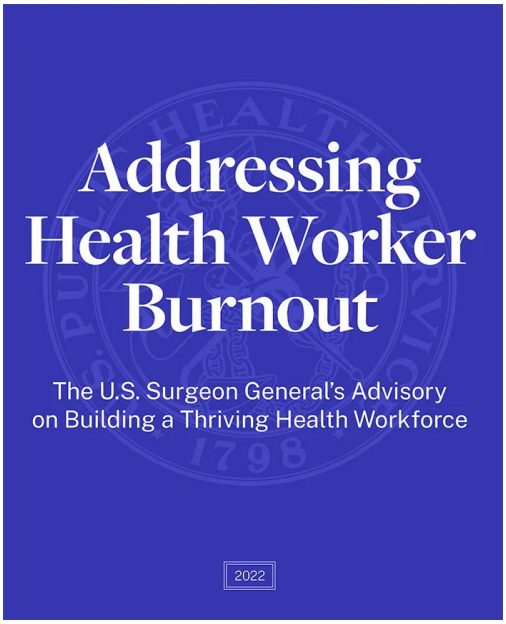
Some 48% of nurses before the pandemic reported that the actions of management showed patient safety was not a top priority. That became a concern for 58% of nurses during the pandemic.

Before the pandemic, 64.9% of medical-surgical nurses reported insufficient staffing. That rose to 75% during the pandemic.

Pre-COVID, 54% of medical-surgical nurses were determined to be suffering from high burnout. That number rose to 58.9% during the pandemic.

High Rates of Nurse Burnout

Commenting on their findings, the research team concluded, "The high rates of nurse burnout during the pandemic appear to be largely a consequence of high burnout prior to the pandemic. Addressing the root causes of high nurse burnout and hospital job dissatisfaction before the pandemic is critical to achieving a stable, qualified hospital nurse workforce going forward."



U.S. Surgeon General's advisory.

Those findings come just months after U.S. Surgeon General Vice Admiral Vivek Murthy, MD, MBA, issued a special advisory warning that burnout has reached "crisis levels" throughout the U.S. health care workforce.

"Burnout among health workers has harmful consequences for patient care and safety, such as decreased time spent between provider and patient, increased medical errors and hospital-acquired infections among patients," the Surgeon General advisory says. "Burnout results in patients getting less time with health workers, delays in care and diagnosis, lower quality of care, medical errors, and increased disparities."

Nurse-to-Patient Ratios

One of the key drivers of burnout for nurses is the chronic stress caused by patient overload — when a single nurse has so many patients on a shift they are unable to deliver all the required care or effectively perform the patient surveillance required to maintain optimal patient outcomes. This nurse-to-patient staffing ratio is not a minor issue, although it is one most patients are unaware of, despite how crucial it is to their own care.

Over the last 20 years, more than 100 studies by academic researchers have produced evidence confirming the link between inadequate hospital nurse-to-patient staffing levels and poor patient outcomes up to and including unnecessary death. Nurse-to-patient ratios can vary across different hospital units depending on the intensity and complexity of care. A safe hospital nurse staffing standard established by law in California 20 years ago mandates that nurses in adult medical-surgical units care for no more than five patients at one time. Nevertheless, it is not unusual for many hospitals across the country to set nurse-to-patient workloads higher. One reason hospital administrators do this is to lower costs by having fewer nurse employees, meanwhile, they can press the remaining nurses to work harder. But this spreads less nursing care across a larger group of patients and can have very serious consequences.

A 2002 landmark study conducted by a Penn Nursing CHOPR team headed by Aiken found that in hospitals with high nurse-to-patient ratios, each additional patient per nurse was associated with a 7% increase in the likelihood of dying within 30 days of admission and a 7% increase in the odds of failure-to-rescue (or the failure to respond effectively to post-surgical complications). Each additional patient per nurse was associated with a 23% increase in the odds of nurse burnout and a 15% increase in the odds of nurse job dissatisfaction.

Increased racial disparities

These findings have been repeatedly confirmed in many later studies. In addition, recent multiple studies headed by LDI Senior Fellow and Associate Director of CHOPR Margo Brooks Carthon, PhD, RN, have detailed how inadequate nurse-to-patient staffing ratios have the additional negative

impact of increasing racial disparities in patient outcomes. This is because minorities have long experienced worse hospital outcomes due to structural racism, heavily weathered life conditions, and chronic diseases. The thinning of nursing attention in their in-patient care further increases the already poorer quality of these patients' outcomes.

Aside from the California law over the last 20 years, 15 states have attempted to take various actions on the nurse-to-patient staffing issue at the same time such innovations have been vigorously opposed by the high-powered lobbying efforts of the American Hospital Association (AHA), its state affiliates, and related hospital industry stakeholders that have sought to halt or water down the efforts.

Currently:
• Eight states (CT, IL, NV, NY, OH, OR, TX, WA) require hospitals to have nurse staffing committees.
• One state (MN) requires hospitals to establish Chief Nursing Officers to develop staffing plans.
• One state (CA) has nurse-to-patient ratios set by law.
• Five states (IL, NJ, NY, RI, VT) require hospitals to publicly disclose or report their nurse-to-patient staffing ratios in various ways. For instance, in New Jersey, hospitals are required to provide quarterly reports to the state about their nurse-to-patient ratios and that data is made accessible to the public through the New Jersey Department of Health's Hospital Patient Care Staffing website. By selecting from the list of all New Jersey hospitals, users can see and compare exact ratio reports. For instance, in the Medical-Surgical units of Cooper Hospital in Camden, New Jersey, there are 2.8 patients for every registered professional nurse and 12.2 patients for every unlicensed assistive personnel. By comparison, in the Medical-Surgical units of nearby Jefferson Hospital in Cherry Hill, there are 5.7 patients for each registered professional nurse and 15.4 patients for each unlicensed assistive personnel.

Many Programs Ineffective

However, the new CHOPR cross-sectional study notes that, so far among all of those state programs, the only major policy response to chronic nurse understaffing that has succeeded in altering the quality of patient care is California's. That law established in 2004 mandates minimum nurse staffing requirements and has resulted in California hospital patients receiving an average of 2-3 more hours per day of registered nursing care.

One of the latest political battles over a potential state law mandating nurse staffing minimums is currently underway in Pennsylvania.

In its coverage out of Harrisburg, the *Pennsylvania Capital-Star* newspaper reports that despite the majority support among legislators for passing a nurse-to-patient staffing minimums law, the measure has long been bottled up in the Republican-controlled House Health Committee.

The *Capital-Star* goes on to explain, "The political forces fighting over the proposal wield political muscle. The state's hospital association regularly spends more than $1 million a year on lobbying the legislature, according to state records. On the campaign side, both the association and health care unions, such as [Service Employees International Union] SEIU Healthcare and the Pennsylvania Association of Staff Nurses and Allied Professionals, are active. The hospital association has contributed $3.2 million to politicians' coffers in the past 24 years according to Follow the Money, an online database; SEIU Healthcare has given almost $900,000 over the last 10."

Following the 2022 election, Democrats appear to have gained leverage in the Pennsylvania Legislature and bring with them new opportunities for the safe nurse staffing bill to move forward toward becoming law.

"Patients Likely to Die"

"Beyond politics, there are millions of patients currently receiving care in hospitals with too few nurses who are likely to unnecessarily die, or experience infections and other poor outcomes directly related to the thinned-out nursing care they receive," said Aiken. "The heartfelt gratitude the public showed to nurses during the pandemic has not translated into public advocacy and policy actions to ensure that hospitals employ enough nurses for the provision of safe and effective care now and in the future. Much research shows that more nurses in hospitals is in the public interest; it is past time to act to make that happen."

Author