

# Occupational Stress in RNs: A Mixed Methods Study

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September 22, 2025  
DOI: 10.3912/OJIN.Vol30No03PPT56

## Article

### Abstract

The pervasiveness of occupational stress in healthcare settings and its impact on registered nurses (RNs) has been a professional concern for decades. Occupational stress impacts the well-being of nurses and contributes to attrition from RN direct-care roles. One option for RNs experiencing high stress is to enter graduate school for an advanced degree. This descriptive, mixed-methods study explored the occupational stress of RNs enrolled in a master’s nursing program and workplace factors that motivated their decision to leave direct-care nursing. The participants (n=190) completed the Nurses Stress Scale which divides sources of occupational stress into three environments - *psychological, social, and physical*. The results demonstrated that *physical environment* factors including staffing, scheduling, and lack of time to provide quality patient care were the predominant source of occupational stress. *Psychological environment* factors regarding the emotional work of nursing, including patient suffering and deaths, were perceived as less stressful. Interactions with peer RNs, physicians, and supervisors in the *social environment* created the lowest perceptions of occupational stress. More than half of the participants also responded to the two open-ended prompts. This narrative data provided context about participant experiences and supported the quantitative results, highlighting the difficulties related to the *physical environment* and structure of the workplace. The study adds to the literature on occupational stress in nursing and provides insight about stressors leading to attrition from direct-care nursing.

**Key Words:** Nursing; occupational stress; attrition; graduate nursing education; healthcare

The personal and professional responsibility to provide safe and high-quality patient care is a core value of the profession of nursing.

The personal and professional responsibility to provide safe and high-quality patient care is a core value of the profession of nursing. Environments that allow registered nurses (RNs) to consistently meet this high standard for practice will reap the benefit of a nursing staff that exhibits professional pride ([Foster, 2022](#)). However, when RNs are unable to perform their nursing roles effectively, there are multiple negative consequences, one being occupational stress ([Cirma et al., 2021](#); [Okuhara et al., 2021](#)).

### Background

Various factors have been identified in healthcare settings that contribute to the experience of occupational stress by RNs. Contributing factors include insufficient staffing, incivility in the workplace, and institutional dysfunction ([Okuhara et al., 2021](#); [Rutledge et al., 2024](#)). Closer inspection of these factors reveals their impact on the patient care workflow of RNs. Without enough staff, RNs balance extra responsibilities and other demands. If unable to complete the required work, prioritizing tasks can lead to delayed or missed care ([Tomaszewska et al., 2024](#)). A lack of RNs or paraprofessionals decreases the ability to delegate, creating additional work. Newly graduated RNs are particularly impacted, experiencing stress as they struggle with the unpredictability, pace, and demands of the role ([Lyu et al., 2024](#)).

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Incivility in intra- and interprofessional relationships is commonly reported by RNs as a stressor; this stress is compounded by ineffective leadership ([Freedman et al., 2024](#)). Bullying, favoritism in assignments, hands-off management, and peers unwilling to help each other are additional burdens ([Freedman et al., 2024](#)). Providing care to patients and families who cannot be satisfied is an increasing source of stress for RNs, accompanied by fears of workplace violence, often when mental illness or substance use disorders are evident ([Dafny & Beccaria, 2020](#)). Stress in the workplace can be exacerbated by psychological and physical strain in RNs' personal lives as well ([Babapour et al., 2022](#)).

The consequences of occupational stress are also well documented in the nursing literature. Occupational stress decreases the quality of life and general well-being of RNs, which is especially concerning ([Babapour et al., 2022](#)). This stress can lead to physical health issues such as hypertension, musculoskeletal disorders, and cardiovascular disorders ([Girma et al., 2021](#)). Mental health impacts of occupational stress may include anxiety, depression, and substance use ([Davis et al., 2021](#); [Rutledge et al., 2024](#)). Ongoing occupational stress can result in burnout that impacts both nurses and patients ([Al Yahyaee et al., 2022](#); [Musker & Othman, 2024](#); [Oktay & Ozturk, 2022](#)). RNs who experience burnout exhibit emotional exhaustion and may neglect personal needs in the workplace and at home ([Sullivan et al., 2022](#)). This leads to a low sense of professional accomplishment, as well as decreased feelings of empathy and detachment from their own emotions, called depersonalization ([Sullivan et al., 2022](#)).

**Ongoing occupational stress can result in burnout that impacts both nurses and patients.**

There can be tragic consequences of burnout and its impact on the physical and mental health of nurses. Data reported in the United States (U.S.) National Violent Death Reporting system from 2017-2018 revealed that the rate of suicide (17.1/100,000) among female nurses of all preparation levels was nearly double the general female population (8.6/100,000) ([Davis et al., 2021](#)). Since secondary data were used, the types and influence of occupational stress could not be identified, but the difference between groups was statistically significant ([Davis et al., 2021](#)). In addition, these data do not reflect the impact of the COVID-19 pandemic on occupational stress in RNs. Increased levels of burnout and compassion fatigue following the pandemic have been reported by nurses globally ([King et al., 2022](#); [Musker & Othman, 2024](#); [Oktay & Ozturk, 2022](#); [Rutledge et al., 2024](#)).

**Attrition and intent to leave are also consequences of occupational stress in nursing.**

Attrition and intent to leave are also consequences of occupational stress in nursing ([Al Yahyaee et al., 2022](#); [Auerbach et al., 2024](#); [Rutledge et al., 2024](#)). In a U.S. study conducted between February and November 2021, the intent of RNs to leave direct patient care increased from 20% to 32% ([Berlin et al., 2022](#)). Strategies to retain new graduate and experienced RNs in direct patient care roles continue to be investigated as attrition impacts the work environment for nurses and quality of patient care ([Auerbach et al., 2024](#); [Lyu et al., 2024](#); [Rutledge et al., 2024](#)).

When RNs who experience workplace dissatisfaction choose to leave their current positions, they may take various paths ([Berlin et al., 2022](#)). A lateral move is when direct inpatient care or bedside RNs move to another unit, practice area, facility, or organization. RNs who are travel nurses are included in this category. Alternatively, with RN credentials (with or without advanced certification) nurses can seek promotion to management, supervisory, or leadership roles inside or outside their organizations. RNs may also choose to leave the nursing profession and use their knowledge and skills in a non-nursing role ([Berlin et al., 2022](#)).

Another professional path for RNs is to attend graduate school for an advanced degree ([Auerbach et al., 2020](#)). In nursing this could be one of many non-clinical specialties such as education, leadership, or informatics. If remaining in a direct care setting is the professional goal, options include one of four advanced practice roles: nurse practitioner (NP), clinical nurse specialist (CNS), certified nurse midwife (CNM), or certified registered nurse anesthetist (CRNA) ([American Nurses Association, n.d.](#)). Focusing on NPs, the RNs who made this transition between 2020-17 more than doubled in the US (approximately 91,000 to 190,000) ([Auerbach et al., 2020](#)).

Committing to a graduate education is a significant undertaking with both financial and personal costs. Individual motivations for advancing education will ultimately impact expectations, experience, and occupational satisfaction ([Berlin et al., 2022](#); [Macdiarmid et al., 2021](#)). With increased awareness of occupational stress in nursing, particularly following the COVID-19 pandemic, more data is needed to understand the impact of this stress on attrition from RN direct-care (i.e., bedside care) roles. The purpose of this study was to explore the influence of occupational stress and other motivating factors in RNs who enrolled in a master's program to become NPs. Understanding these motives has implications for individual nurses, educational programs, and healthcare employers.

Methods

A mixed-methods study was conducted with a sample of RNs in a master’s program enrolled in the family nurse practitioner and adult geriatric nurse practitioner tracks in a private urban nursing program. Approval of the university institutional review board was received prior to the study. All master’s level nursing students were eligible to participate, regardless of their progress in the program.

Measures

To quantify occupational stress in nurses we chose the Nursing Stress Scale (NSS), created by Gray-Toft and Anderson in 1981. Pavek et al. (2022) noted that the NSS was still widely used to measure occupational stress and had demonstrated reliability and validity. The NSS identifies 34 potentially stressful experiences (Items) divided into seven sub-categories (factors) in physical, psychological, and social work environments (see Table 1).

Table 1. Nursing Stress Scale Work Environments and Sub-Categories (Factors)

Psychological
Death and dying
Inadequate preparation
Lack of support
Uncertainty concerning treatment
Social
Conflict with physicians
Conflict with other nurses
Physical
Workload
Nursing Stress Scale (Gray-Toft & Anderson, 1981)

Data Collection and Analysis Procedures

Graduate program faculty were emailed to arrange classroom visits (in-person or virtually) for recruitment. Faculty who participated in data collection copied the online survey link into the course learning management system, but it remained hidden until recruitment. In each classroom, a researcher introduced the study and reviewed the informed consent located at the beginning of the survey. In classrooms where faculty dedicated time for completion, students who did not want to participate could work quietly on their own. The survey link stayed open for a two-week period in case students decided to participate later or when faculty only allowed a recruitment visit. Only one submission per IP address was allowed. An incentive raffle of ten \$7 Starbucks gift cards was offered.

For data collection, the NSS items were entered into an online survey platform with the original participant response scale of experiencing the stressor *very frequently*, *frequently*, *occasionally*, and *never*. Gray-Toft and Anderson (1981) prefaced the NSS with the following prompt, but for online use in this study the parenthetical content was deleted: “*Below is a list of situations that commonly occur in a hospital unit. For each item indicate (by means of a check) how often in your present unit have you found the situation to be stressful.*” Numerical data were categorized by percentages to represent frequencies.

Basic demographic questions were included in the online survey. Additionally, two prompts with open text boxes were used to solicit narrative responses from participants, as follows: *1. What are your career goals as a Nurse Practitioner?* and *2. Explain aspects of your current/most recent RN position that contributed to your decision to pursue a graduate degree.*

Conventional content analysis of narrative data was utilized using strategies from qualitative methodology which allow researchers to develop codes emerging from the participant narratives (Hsieh & Shannon, 2005). Responses from each question were initially analyzed separately with open coding by the two researchers. Then together the researchers identified

similarities and differences within their coding of the responses from the two prompts. Themes were determined *a priori* to align codes with the three NSS environments (psychological, social, and physical).

Quantitative Results

Participant Demographics

The sample of 190 students were diverse by race/ethnicity, representing the diversity of the student population and urban center (see [Table 2](#)). The majority of participants (84.7%) were between ages 25-44 and identified as female (89.5%). The majority were in the FNP program (84.2%), which was representative of the graduate student population.

Table 2. Participant Demographics (n = 190)

Characteristic	n (%)
Sex/Gender Identification	
Female	170 (89.5)
Male	18 (9.5)
Non-Binary	1 (0.5)
Prefer not to answer	1 (0.5)
Age	
18-24	7 (3.7)
25-34	108 (56.8)
35-44	53 (27.9)
45-54	18 (9.5)
55-64	4 (2.1)
Race/Ethnicity	
Asian or Asian American	50 (26.3)
Black or African American	46 (24.2)
Hispanic or Latino	27 (14.2)
Middle Eastern or North African	5 (2.6)
White	53 (27.9)
Multiracial or another race/ethnicity	14 (7.5)
Prefer not to answer	5 (2.6)
Program	
Family Nurse Practitioner	160 (84.2)
Adult Geriatric Acute Care Nurse Practitioner	30 (15.8)

Quantitative Results (Nurses Stress Scale)

The NSS includes 34 items in seven sub-categories aligned to the psychological, social, and physical work environments (Table 1). Results in Tables 3, 4, and 5 reflect items that 25% or more of the participants identified as *very frequently* or *frequently* a source of occupational stress in the three environments. Table 6 describes types of conflict in the *social environment*.

Table 3. Responses in NSS Psychological Environment

Psychological (5 of 18 Items >25% response rate)	VF/F (%)
Performing painful procedures	40
Watching a patient suffer	32.1
Feeling helpless when a patient does not improve	29
Lack opportunity to talk openly about unit problems	26.3
Death of a patient	25.8
VF/F = Very Frequently/Frequently	

Table 4. Responses in NSS Social Environment

Social (2 of 10 Items >25% response rate)	VF/F (%)
Floating to other units	33.2
Fear of making a mistake in patient treatment	26.8
VF/F = Very Frequently/Frequently	

Table 5. Responses in NSS Physical Environment

Physical (5 of 6 Items >25% response rate)	VF/F (%)
Unpredictable staffing and scheduling	63.1
Not enough staff	62.6
Too many non-nursing tasks	62.1
Not enough time to provide patient emotional support	54.2
Not enough time to complete nursing tasks	48.9
VF/F = Very Frequently/Frequently	

Table 6. Items related to Conflict in NSS Social Environment

RN - MD	VF/F (%)

Conflict with MD	12.6
Criticism by MD	15.8
<b>RN - Supervisor</b>	<b>VF/F (%)</b>
Conflict with supervisor	14.7
Criticism by supervisor	12.1
<b>RN - RN</b>	<b>VF/F (%)</b>
Difficulty working with an RN on the unit	22.1
Difficulty working with an RN outside the unit (19.5%)	19.5
VF/F = Very Frequently/Frequently	

Psychological Environment

The 18 items in this environment are fundamental experiences in the work of nursing and provision of patient care (Table 3). Only 5 of the 18 items generated responses of >25% very frequently or frequently stressful. Four were related to the *death and dying* sub-category/factor and one with *lack of support*.

Social Environment

This environment includes 10 items about conflict with peer RNs, physicians, and supervisors (Table 4). Only 2 of 10 items - floating to other units and fear of making a patient care mistake - generated responses of >25% *very frequently or frequently* stressful. The placement of these items in this environment focuses on the social conflict aspect of these experiences rather than the psychological stress they might cause (Gray-Toft & Anderson, 1981).

Difficult interactions with peer RNs were higher than with supervisors or physicians.

Due to the prevalence of workplace incivility in literature regarding occupational stress (Freedman et al., 2024) items related to conflict or difficulties with other colleagues were included in the analysis (Table 6). None reached the 25% response rate of *very frequently or frequently* a source of stress. Difficult interactions with peer RNs were higher than with supervisors or physicians.

Physical Environment

The highest rates of occupational stress were found in the physical environment representing concepts related to workload and structural workplace issues (Table 5). Of the 6 items, 5 scored as *very frequently or frequently* a source of stress by nearly 50% or more participants. Less than 10% reported these items were *never* a source of stress.

Qualitative Results: Negative Workplace Experience

The centering narrative of the study that explored occupational stress in graduate nursing students was elicited with both prompts, *What are your career goals as a Nurse Practitioner?* (n=106/190 participant responses) and *Explain aspects of your current/most recent RN position that contributed to your decision to pursue a graduate degree* (n=100/190 participant responses). *Negative workplace experience* emerged as a major theme as RN participants communicated purposes, explanations, and goals related to their decisions to leave direct care. Using the structure of the NSS, coded responses were aligned in the three environments - *psychological, social, and physical* - as sub-themes. Terms and concepts of interest noted in the responses were mentioned the following number of times: lack of respect or value, disrespect (n=8), stress or stressful (n=9), COVID or pandemic (n=10), staff or staffing or understaffed (n=22), and autonomy or independent (n=27).

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Psychological Environment

The NSS psychological environment includes the provision of nursing care with concepts related to death and dying, inadequate preparation, lack of support for practice, and uncertainty concerning treatment (Gray-Toft & Anderson, 1981). Few responses aligned here. Examples of participant responses included:

- “ICU [intensive care unit]- emotional and mentally draining”
- “...did not actively work to support the staff...”
- “...working on a bone marrow transplant floor. It was a very sad floor as we dealt with a lot of patients who were long term patients of ours that passed away”
- “... (patients and visitors) with high expectations of acting like the hospital is a hotel”
- “Feeling unappreciated and disrespected by patients, family...”

### **Social Environment**

The social environment identifies interactions with other nurses, supervisors, and physicians as a potential source of occupational stress (Gray-Toft & Anderson, 1981). These interactions can be related to conflict, criticism, and difficulties with others in the workplace. Participant responses included:

- “Unable to provide pain medication or help the patient due to no orders made by the physician even after numerous attempts.”
- “The frustration of having to be an advocate for your patients, yet getting push back from providers”
- “...poor management...”
- “... frequently working...with float nurses who dislike floating to my unit.”
- “Feeling unappreciated and disrespected by... (the) medical team and management.”
- “Working with emotionally detached physicians in oncology is extremely difficult mentally and emotionally.”
- “There was constant miscommunication between the doctors, NP's, nurses, social work and all other care professionals.”

### **Physical Environment**

The physical environment focuses on workplace issues such as staffing issues and time to provide safe nursing care, including tasks placed on nurses outside their actual job description (Gray-Toft & Anderson, 1981). Participant narrative responses were heavily aligned with this sub-theme and best represented by the following:

- “Too many non-nursing responsibilities. Not feeling valued.”
- “Short staff, poor treatment of nurses and (a) toxic work environment.”
- “...I saw it (graduate school) as a way out of the disorganization and mistreatment experienced as a staff nurse.”
- “... I'm not able to make a difference due to obstacles like staffing, patient load, lack of resources, etc.”
- “(Becoming an NP for an) improved quality of life without working shifts.”
- “FEELING UNDERVALUED”
- “Not enough staff, increase of work violence.”
- “Working in an ED having 12-15 patients assigned to me...”
- “CHRONIC UNDERSTAFFING, LOSS OF AUTONOMY”
- “...the most stress when the staffing is short because that can cause patients to die.”
- “The units are understaffed, causing unsafe practices for our patients.”
- “... nurses are at the bottom of the ladder in the hospital. Nurses do everything ranging from caring for the patients to doing every ancillary job, to transporter to respiratory to cleaner...”
- “Everyone orders the nurse around, that's not the reason we went to school to become every profession's servant.”

### **Discussion**

These quantitative and qualitative data suggest that occupational stress as experienced by the participants is multifaceted. The choice to use the NSS *psychological, social, and physical environments* for analysis of both types of data revealed anticipated and unique results.

Psychological Environment

In the *psychological environment*, which includes more than half of the items in the NSS, only 28% of items (5/18) were *very frequently or frequently* a source of stress. Four were in the *death and dying* sub-category, representing actions and experiences related to the therapeutic caring component of nursing practice. There are numerous considerations in these results. First, RNs in many clinical settings witness patient suffering and death and interventions can cause pain and distress, but others do not. When RNs do have these experiences, individual characteristics and workplace dynamics can impact their perception of stress ([Okuhara et al., 2021](#)). Regarding patient death, the unit/area of RN practice would also influence stress perception. For example, deaths in the [neonatal] NICU, versus adult ICU or surgical unit, versus oncology, are very different experiences. Since participants were not asked to specify their practice area/unit, this influence could not be explored.

Not being able to talk openly about problems in the workplace was another source of psychological stress...

Not being able to talk openly about problems in the workplace was another source of psychological stress but aligned to the *lack of support* sub-category. The NSS placed this item here because of the impact on the individual RN. But the structure and dynamics of the workplace, the *physical or social environment*, can influence the ability to discuss and solve problems.

Qualitative responses from a distance supported that items in the NSS *psychological environment* were a less frequent source of occupational stress. Very few qualitative responses aligned with dissatisfaction with the therapeutic aspects or emotional labor of the nursing profession as a motivation to leave direct care.

Social Environment

The highest sources of occupational stress in the NSS *social environment* were related to floating to other units (*conflict with other nurses* sub-category) or fear of making a mistake (*conflict with physicians* sub-category). The categorization of these as social may reflect the professional imperative that nurses function at their highest level when providing patient care. When mistakes are made the responses of supervisors, physicians, and peers can add to the burden and result in additional occupational stress ([Okuhara et al., 2021](#)).

The highest sources of occupational stress in the NSS *social environment* were related to floating to other units...or fear of making a mistake.

Also in the *social environment* were items related to relationships with peer RNs, supervisors, and physicians. Because incivility and bullying continue to be identified in nursing ([Freedman et al., 2024](#); [Okuhara et al., 2021](#)), the result that none of these items met the 25% *very frequently or frequently* source of stress was unexpected. Over 80% of participants believed that *conflict* or *criticism by physicians* or *supervisors* were only *occasional* or *never* a source of stress. This was evident in the few narrative responses about motivation to become NPs being coded to the NSS *social environment*. Some participants reported conflict with physicians, management, and other RNs interfered with the ability to receive timely orders and advocate effectively for patients. Instances of miscommunication, detachment, and lack of respect or appreciation were shared as well.

The literature supports the assertion that occupational stress and intention to leave are influenced by workplace relationships.

The literature supports the assertion that occupational stress and intention to leave are influenced by workplace relationships (Al Yahyaei et al., 2022; Lyu et al., 2024). Effective collaboration between nurses and physicians and autonomy in practice helps to mitigate these factors ([Bulut et al., 2024](#); [Parizad et al., 2021](#)). The latter could be the experience of these participants.

Physical Environment

Items in the NSS *physical environment* overwhelmingly represented the highest source of occupational stress for the participants, with 5 of 6 items *very frequently or frequently* stressful (48.9-63.1%). These items capture serious impacts on both patients and RNs when the structure of the environment is not conducive to quality nursing care. Participant reports of staffing issues, too many non-nursing demands, inability to spend enough time with patients and complete tasks are supported in nursing literature related to burnout and attrition ([Davis et al., 2021](#); [Musker & Othman, 2024](#); [Oktay & Ozturk, 2022](#)).

The number of qualitative responses aligned with the *physical environment* supported the NSS results. More than half of the participants took time to explain their motivations and goals. Their responses highlighted the pain, frustration, and anger that were pushing these RNs from their current roles. Concern for patient safety was evident. While many participants were eager for advanced practice roles, escaping their current RN practice for more control and healthier work environments permeated the responses.

Concern for patient safety was evident.

Limitations

There were several limitations in this study. The sample was recruited from one graduate program in a large urban area, limiting generalizability. The NSS uses language for the inpatient setting and not all participants may work in those settings. Not asking participants about their specific employment area could have impacted responses to NSS items such as patient deaths. As a nonexperimental, descriptive study, a correlation between occupational stress and the decision to attend graduate school could not be made. Qualitative coding of narrative responses is subjective and the alignment with *a priori* themes from the NSS may have limited the analysis.

Clinical Implications and Conclusions

...structural changes to mitigate occupational stress...are needed to stem attrition of RNs in direct-care roles.

This research provides further evidence that structural changes to mitigate occupational stress, or the factors in the NSS physical environment, are needed to stem attrition of RNs in direct-care roles (Auerbach et al., 2020, 2024; Girma et al., 2021; Lyu et al., 2024; Musker & Othman, 2024; Okuhara et al., 2021). Entering a graduate nursing program to become a nurse practitioner is an excellent professional step for RNs, but if the driving force is to escape occupational stress of direct-care nursing there can be consequences. Without clear intentions, RNs may find after investing time and money that the program may not match their career goals. When graduate students lack direction or genuine interest it impacts the program, peers, and faculty. Nurse practitioners who are dissatisfied may further contribute to attrition from healthcare organizations. Creating healthy physical environments may help RNs stay in direct-care roles, experience satisfaction, and contribute to quality patient care.

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Both authors declare no financial or other conflict of interest in this research study. IRB approval for the research was obtained and is noted in the manuscript.

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**Citation:** Elting, J.K., Antony, K., (September 22, 2025) "Occupational Stress in RNs: A Mixed Methods Study" *OJIN: The Online Journal of Issues in Nursing* Vol. 30, No. 3.

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