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**Perceived Sources of Stress Related to Burnout Amongst Emergency Department Staff Due
to the COVID-19 Pandemic: A Literature Review**

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Abstract

Emergency departments (ED) are usually considered high stress environments. The effects of the COVID-19 pandemic and the accompanying challenges such as frequent exposure to the novel virus, lack of personal protective equipment (PPE), being over worked and underpaid, and the uncertainty surrounding the overall trajectory of the COVID-19 pandemic have resulted in an increased level of burnout for ED staff, especially nurses. This study involves a meta-analysis of current literature surrounding ED burnout including incidence rate and causes during the COVID-19 pandemic. Because studies indicate upwards of three fourths of ED staff reporting increased stress and burnout, finding ways to overcome and prevent burnout is essential to protecting ED nurses' physical and mental health. A lack of studies from the United States (U.S.) indicates a potential gap in research and more research needs to be conducted focused on potential solutions and preventive measures of the burnout crisis.

Keywords: COVID-19, emergency department, pandemic, burnout, nurse

Introduction

Each specialization area within the healthcare field has a specific role to play, and it is this division which provides for the best level of care for each patient. The staff within the ED are highly trained to react to a multitude of presenting concerns and assess the needs of each patient. The ED provides stability for patients during chaos and relies on the quick thinking and problem-solving skills of its staff. The COVID-19 pandemic, however, has changed the landscape of emergency medicine and how ED staff are equipped to manage the demands of patient care (Moscu et al., 2021).

The World Health Organization (WHO) declared COVID-19 a pandemic on March 11th, 2020. Globally, over 100 million people have been infected with this virus and more than 2.5 million have died due to COVID-19 (Katella, 2021). In the United States there have been nearly 81 million people test positive for COVID-19 and nearly 982,000 people have died as of April 7, 2022 (Center for Disease Control and Prevention [CDC], 2022). The CDC (2021) has been collecting data throughout the pandemic and has found that those over the age of 75 have a significantly higher likelihood of dying from this virus, but the age group with the most positive cases is 18-29 years of age. This disease has changed the world in many ways, but healthcare became flooded with patients in which treatments and evidence-based practice was changing every day.

The COVID-19 pandemic has challenged and overwhelmed many healthcare professionals which has contributed to elevated levels of stress and mental health concerns (Chor et al., 2020). ED personnel have a unique perspective on the pandemic as they are typically the first line of healthcare workers to treat and manage COVID-19 patients. The WHO (2021) defines “burnout” as a syndrome that results from chronic workplace stress leading to energy

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depletion, a mental distance from one's job, and reduced professional efficacy. Typically, emergency department staff have a higher level of burnout than other departments, but the COVID-19 pandemic has amplified this phenomenon significantly (Chor et al., 2021). The emotional stress of the pandemic for these healthcare professionals is compounded in multiple ways: the stress from caring for the needs of COVID-19 patients as well as the stress and expectations of the public.

ED staff are at a greater risk of exposure and are dealing with overwhelming workloads and moral dilemmas. They are being charged with working in an environment that is nothing like they have seen before (Shanafelt et al., 2020). ED staff are experiencing increased negative mental health outcomes such as depression, insomnia, increased anxiety, and trauma from seeing countless COVID-19 patient deaths (Vagni et al., 2020). Additional stressors for ED professionals include working in conditions that are unfamiliar to them, weighing the dilemma of protecting others or themselves, lacking necessary equipment, and fearing the possibility of bringing home the COVID-19 virus to their family members (Shanafelt et al., 2020). Studies have shown half of ED staff have experienced significant mental health concerns as a result of the COVID-19 pandemic. Jalili et al. (2020) found that 50% of their participants were experiencing high levels of emotional exhaustion, and 86% were experiencing moderate burnout due to taking care of COVID-19 patients during the pandemic. Another study found that 50% of their participants who worked on the frontlines during the pandemic experienced burnout, whereas healthcare professionals not working with COVID-19 patients were at a significantly lower risk (Nishimura et al., 2021). Lai et al. (2020) sent a survey out to frontline healthcare workers and found that 50% had symptoms of depression, 45% had anxiety, 34% were experiencing insomnia, and 72% were in distress. These negative mental health outcomes can

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lead to impaired reasoning, lack of attention to detail, and a decrease in problem-solving which contribute to poor patient outcomes (Celmece & Menekay, 2020).

The aim for this literature review is to determine contributing factors of stress leading ED staff to experience burnout due to the COVID-19 pandemic. Research in this area is still limited due to the relative brief time since the inception of the COVID-19 pandemic. Understanding the reasons ED staff are experiencing burnout can lead to changes that decrease this phenomenon and increase healthcare workers' efficacy and improve mental health.

Methods

An extensive review of data and literature was conducted using the databases CINAHL and PubMed. The keywords included in the search for literature included “emergency department or emergency room”, “COVID-19”, and “burnout”. The articles found from the databases met the inclusion criteria of containing the keywords, peer-reviewed, and written in English. Of the articles that met these inclusion criteria; additional exclusion criteria were applied for the following reasons: not addressing factors contributing to burnout, published over five years ago, or full text was not available. PubMed originally provided 27 articles; however, three were not published in English and were removed from the search. Six additional articles were excluded from this review as they only addressed burnout statistics and not factors contributing to the cause of burnout. CINAHL originally provided 15 articles; however, two were immediately removed because they did not address the COVID-19 pandemic. Seven more were removed due to either addressing a previous pandemic, full text not being available, or not providing causation for burnout.

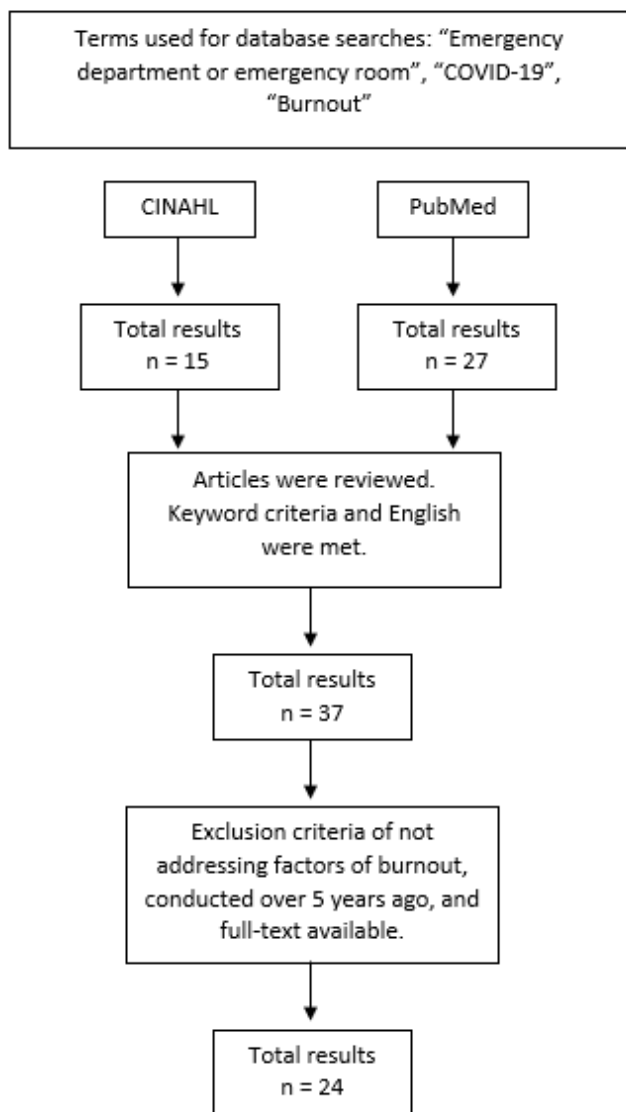
In summary, 37 articles were found following inclusion criteria. Once thoroughly examined, a total of 24 articles were included in this review following application of exclusion

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criteria. The majority of the literature utilized in this review are cross-sectional studies as well as a few systematic reviews. The literature included is from various countries across the world, highlighting the global impact COVID-19 has had on healthcare professionals. Figure 1 demonstrates the steps of selecting the final articles in this review.

Figure 1

Literature Review Search Results



Note. Two search engines tools were utilized to narrow the scope of research to consider ED nurse burnout during the COVID-19 pandemic.

Results

Causes of Burnout

Burnout is a syndrome caused by an extreme amount of workplace stress that results in healthcare workers feeling emotionally depleted (WHO, 2021). The COVID-19 pandemic created new sources of stress for nurses as they tried to provide high quality care during a challenging time. Shanafelt et al. (2020) found that there were eight leading causes of anxiety amongst nurses due to the COVID-19 pandemic: access issues to PPE, being exposed to COVID-19, lack of rapid testing options, the overall uncertainty of the COVID-19 pandemic, lack of access to childcare due to increased work hours and school closures, floating to new units in which they were not trained, and a lack of communication from supervisors.

The threat of illness and bringing the virus home to family created a dilemma which healthcare workers did not have previously. Hospitals needed healthcare workers to treat COVID-19 patients, which was the role they signed up for, but now there was an added threat of injury and death that created a moral dilemma (Raundenska et al., 2020). While the fear of personal death was intimidating, the responsibility to keep healthcare workers' families safe was equally concerning (Celmece & Menekay, 2020). The prospect of bringing the disease home also created a sense of loneliness for nurses. The most effective way to keep their own families safe was to stay away, leaving many nurses separated from their family support systems while they were working. The social isolation, compounded with the physical stress of demanding work, increased burnout amongst ED healthcare workers (Chor et al., 2020).

The COVID-19 pandemic led to a severe shortage of PPE in hospitals in the U.S. (Cohen & Rodgers, 2020). The lack of PPE was cited as a major stressor for healthcare workers because it added an additional level of fear to what they were already feeling while treating those with

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COVID-19 (Jalili et al., 2020). PPE is designed to protect nurses from the illnesses that they are treating; without it, they are putting themselves at risk of also becoming sick. The shortage of PPE was creating additional risk for healthcare workers who were already overworked and experiencing feeling of burnout (Chor et al., 2020). Not only was the lack of PPE a stressor, but so was the necessity of constant PPE. Universal PPE made nurses physically uncomfortable as they had to wear extensive layers of protections for hours while working (Huang et al., 2020). The prolonged use of PPE made nurses feel trapped and scared throughout their entire shift. Challenges associated with PPE resulted in both physical and emotional struggles.

The unfamiliarity and uncertainty of the COVID-19 pandemic also weighed on healthcare workers. COVID-19 was a new disease which nurses were not prepared to manage, especially early in the COVID-19 pandemic. There were new healthcare practices and precautions coming out constantly, and guidelines changed by the day (Nishimure et al., 2021). The continuous flux, coupled with increased workload and lack of equipment, negatively impacted healthcare workers and contributed to high levels of burnout (Sangal et al., 2020).

Effects of Stress

The ED by nature is typically more stressful than other units; however, the COVID-19 pandemic increased this, leading to negative mental health outcomes such as depression, insomnia, and post-traumatic stress disorder (PTSD) (Vagni et al., 2020). Jalili et al. (2020) found that 50% of healthcare workers surveyed said they were experiencing high emotional exhaustion, and 86% were experiencing moderate burnout. This correlates with results from Rodriguez et al. (2020) who found that 55% of ED nurses were experiencing feelings of burnout and 23% screened positive for having a risk factor for PTSD. Likewise, one study found that of

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those working with COVID-19 patients, 50% had depression symptoms, 45% had anxiety, 34% were experiencing insomnia, and 72% reported feeling distressed at work (Lai et al., 2020).

Societal and gender factors also contributed to rates of nurse burnout. In comparison to other healthcare professionals, nurses experienced higher levels of burnout than physicians, and female nurses experienced more stress and a lower quality of life than their male nurse counterparts (Celmece & Menekay, 2020). Huang et al. (2020) found that nurses experienced anxiety, fear, and sadness at a much higher level than nursing students. They attribute this finding to nursing students being more concerned about the start of their career and feeling excited rather than stressed about the COVID-19 pandemic. However, single female nurses under the age of 36 experienced the highest level of burnout, as well as nurses with less than five years of experience (Jalili et al., 2020).

Proposed Solutions

Nurses have had to find ways to cope with the COVID-19 pandemic. This included watching television shows, spending as much as time as possible with family, and receiving gratitude (Chor et al., 2020). They also appreciated the team dynamic that the COVID-19 pandemic unexpectedly created. Sangal et al. (2020) found that nurses who felt like they were working with a strong team had lower levels of burnout than those who felt more isolated in the hospital. Teamwork and the bond created between healthcare workers during the COVID-19 pandemic may have been one positive to come out of the COVID-19 pandemic. Because everyone working during this time was overwhelmed and overworked, having a team to rely on was important for nurses' mental health. This is especially critical for nurses with pre-existing mental health conditions as they are at a higher risk of developing burnout. It is imperative to

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ensure that these nurses are being checked on and have the appropriate resources made available to them (Lasalvia et al., 2021).

The ability to show emotional resilience is important in order to adapt to negative aspects of bedside nursing. Being adaptable in difficult or new situations can equip an individual or team to function at a higher level. A higher emotional resilience can prevent or reduce feelings of anxiety and depression as well as improve feelings of satisfaction and overall well-being (Vagni et al., 2020). Incorporating training for nurses that focuses on resilience and hardiness can improve coping strategies and decrease stress levels.

Adequate COVID-19 testing can decrease stress and, therefore, burnout because healthcare workers can know if they are bringing the virus home and make the necessary arrangements. Before testing, 68% of ED nurses stated they felt high levels of anxiety due to COVID-19; whereas, after testing, 54% said they strongly agree that knowing their results decreased their anxiety (Rodriguez et al., 2021). Testing allows the nurses to know of their current COVID-19 status as well as if they already have antibodies from previously having COVID-19 which can reduce the fear of bring the virus home to family members.

Addressing safe nurse-to-patient ratio issues can also reduce the risk of burnout among ED nurses. One of the main causes of burnout during the COVID-19 pandemic was the long hours due to staffing issues. If hospitals can hire more personnel, nurses would not have to work such extensive hours and come in for overtime shifts (Celmece & Menekay, 2020). The COVID-19 pandemic put an intense amount of pressure on ED staff who are working in understaffed environments to try and provide the best possible care to all patients thus leading to high levels of burnout. Table 1 outlines the studies reviewed.

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Table 1*Matrix of Evidence*

Authors	Publication Year	Country	Type of Research	Findings
Mohammad Jalili, Mahtab Niroomand, Fahimeh Hadavand, Kataun Zeinali, Akbar Fotouhi	2021	Iran	Cross-sectional study	Over 50% of the healthcare workers surveyed had experienced high levels of burnout, 27% feel emotionally exhausted, and 28% feel a lack of personal accomplishment. Females were more likely to experience high levels of emotional exhaust.
Ana Soto-Rubio, María del Carmen Giménez-Espert, Vicente Prado-Gascó	2020	Spain	Cross-sectional study	It was found that psychosocial risks and emotional intelligence can predict burnout and job satisfaction. Paying too much attention to the emotional aspects of work can have a negative effect resulting in burnout.
Jaroslava Raudenska, Veronika Steinerova, Alena Javurkova, Ivan Urits, Alan D. Kaye, Omar Viswanath, Giustino Varrassi	2020	United States	Comprehensive review	Some main factors contributing to fatigue, stress, and burnout include limited resources, threat of exposure, long shifts, poor sleep habits, work-life balance, the dilemma of work and putting family at risk, increased workload, and lack of constant information.
Long Huang, Wansheng Lei, Fuming Xu, Hairong Liu, Liang Yu	2020	China	Comparative study	Anxiety, fear, sadness, and anger were found to be significantly high in the

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				professional nurses sampled when compared to nursing students. The students felt a range of excitement, doubt, and helplessness. The nurses were more likely to have adopted problem-solving coping strategies to face their challenges than that of the students.
Jianbo Lai, Simeng Ma, Ying Wang, Zhongxiang Cai, Jianbo Hu, Ning Wei, Jiang Wu, Hui Du, Tingting Chen, Ruiting Li, Huawei Tan, Lijun Kang, Lihua Yao, Manli Huang, Huafen Wang, Gaohua Wang, Zhongchun Liu, Shaohua Hu	2020	China	Cross-sectional study	A significant number of front-line healthcare workers reported feelings of depression, anxiety, distress, and insomnia. Sources of distress stem from feeling out of control, changes within work, and feeling isolated.
Monia Vagni, Valeria Giostra, Tiziana Maiorano, Giuliano Santaniello, Daniela Pajardi	2020	Italy	Cross-sectional study	Results showed that there was a positive correlation with emergency stress and burnout, as well as a negative correlation between emergency stress and personal accomplishment. Hardiness was found to be a protective factor for stress and burnout. They propose screening for staff and training for properly managing stress.
Robert M. Rodriguez, Juan Carlos C. Montoy, Karin F. Hoth, David	2021	United States	Prospective cohort study	Nearly half of the participants reported emotional exhaustion and burnout, and about 20%

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A. Talan, Karisa K. Harland, Patrick Ten Eyck, William Mower, Anusha Krishnadasan, Scott Santibanez, Nicholas Mohr				screened positive for the risk of PTSD. They also found that those who previously tested positive for COVID-19 had lowered levels of anxiety. Of those in the study, the main concern they felt was exposing their family members. All factors tested decreased following serology testing.
Nuriye Çelmeçe and Mustafa Menekay	2020	Turkey	Cross-sectional study	Females were found to have higher levels of stress, anxiety, and overall decreased quality of life. Nurses level of burnout was significantly higher than that of physicians. There was a negative correlation between burnout and quality of life.
Yoshito Nishimura, Tomoko Miyoshi, Hideharu Hagiya, Yoshinori Kosaki, Fumio Otsuka	2021	Japan	Cross-sectional study	The study found that those working in the emergency department were at a significantly higher risk for burnout, and 50% of those surveyed who engaged in direct care of patients with COVID-19 were experiencing burnout. There is a call on policy and organizations to protect healthcare providers from burnout.
Wei Ping Daniel Chor, Wei Ming Ng, Lenard Cheng, Wangmin Situ, Jun Wei Chong, Ling Ying Abigail Ng,	2021	Singapore	Cross-sectional study	Nearly 50% of participants reported moderate-to-severe levels of burnout, and nurses were significantly higher than doctors. Coping methods

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Pek Ling Mok, Ying Wei Yau, Ziwei Lin				examined where media, spending time with family, and acts of gratitude from their respective departments. They recommended that the facilities perform regular assessments of their staff.
Rohit B Sangal, Amy Wrzesniewski, Julia DiBenigno, Eleanor Reid, Andrew Ulrich, Beth Liebhardt, Alexandra Bray, Elisabeth Yang, Eunice Eun, Arjun K Venkatesh, Marissa King	2020	United States	Cross-sectional study	They found that those working in the ED who “feel part of a team” had lowered levels of work-stress and burnout. Team alignment, stability, and inclusivity can decrease the level of stress felt by healthcare workers during this pandemic.
Sinu Jose, Manju Dhandapani, and Maneesha C Cyriac	2020	North India	Cross-sectional study	This study found that 54% of those surveyed felt emotional exhaustion, 43% depersonalization, and 79% lack of personal accomplishment. There was a negative correlation between resilience and emotional exhaustion, so increased nurses’ resilience could help lower feelings of burnout.
Richard F. Mollica, Dinali B. Fernando, Eugene F. Augusterfer	2021	United States	Systematic review	The dual loyalty for families and patients has created enormous stress on healthcare workers. Healthcare providers are feeling very overwhelmed and helpless as there seems to be no end in sight. There needs to be self-care instruments in place for healthcare providers in

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				order to reduce the level of stress and burnout being felt around the world.
Oisín Sheehan, Micheal Sheehan, Raluca Ileana Rau, Iomhar O. Sullivan, Geraldine McMahon, Ann Payne	2021	Ireland	Cross-sectional study	Nearly 75% of participants in the study reported that they were burnout from working during the pandemic. Healthcare providers negatively view social distancing at work, increased need for PPE, and social distancing outside of work. They positively view the decreased number of visitors allowed in the hospital and prescreening done before patients can be admitted to the ED.
Sarah Butera, Natacha Brasseur, Nataly Fillion, Arnaud Bruyneel, Pierre Smith	2021	Belgium	Cross-sectional study	The overall prevalence of burnout was higher in ED nurses than in ICU nurses, however there was a significant increase in burnout within the ICU due to the pandemic. Workload and lack of PPE increased likelihood of burnout, but social support from leadership decreased the likelihood.
Cosmina-Alina Moscu, Mihaela Anghela, Liliana Dragomir, Sorina Munteanu, Aurelian Anghela, Aurel Nechita, Anamaria Ciubara	2021	Romania	Cross-sectional study	Some main factors found to be contribution to exhaustion include increased workload, lack of sleep, bureaucracy, and taking care of COVID-19 patients. Work hours is correlated with depression and emotional exhaustion is correlated with workload,

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				bureaucracy, and patients with COVID-19.
Antonio Lasalvia, Francesco Amaddeo, Stefano Porru, Angela Carta, Stefano Tardivo, Chiara Bovo, Mirella Ruggeri, Chiara Bonetto	2021	Italy	Cross-sectional study	Of those who completed the survey, 39% displayed high levels of emotional exhaustion, 47% felt low professional efficacy, and 27% felt high levels of cynicism. Staff with preexisting psychological problems were significantly more likely to experience burnout. Nurses were feeling more emotional burnout and residents were feeling more cynicism.
Guadalupe Manzano García, Juan Carlos Ayala Calvo	2020	Spain	Cross-sectional study	The perceived threat of COVID-19 coupled with the demand of work and lack of resources has created higher levels of burnout. Nurses are being asked to care for as many patients as possible in the shortest amount of time, but that creates lower quality of care and increased risk of error.
María Dolores Ruiz-Fernández, Juan Diego Ramos-Pichardo, Olivia Ibáñez-Masero, José Cabrera-Troya, María Inés Carmona-Rega, Ángela María Ortega-Galán	2020	Spain	Cross-sectional study	The study found that healthcare professionals have experienced high levels compassion fatigue and burnout during the pandemic. They also found that nurses had experienced greater compassion satisfaction when compared to physicians. They attribute this finding to nurses putting in great effort to care for their

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				patients and thus feeling they have done good for those they are caring for.
Mohd Idzwan Zakaria, Ruzaina Remeli, Mohd Fitri Ahmad Shahamir, Mohd Hafyzuddin Md Yusuf, Mohammad Aizuddin Azizah Ariffin, Abdul Muhaimin Noor Azhar	2021	Malaysia	Cross-sectional study	Nearly 62% of nurses surveyed had burnout with feelings of fatigue and frequent physical illness. Factors contributing to their feelings of burnout include work overload, lack of clear guidelines, not enough pay, and the angry public. Nurses experience burnout more than physicians and they found that this may be due to lack of support from hospital leadership.

Discussion

The evidence reveals that more research is needed to address gaps in the literature exploring bedside nursing burnout in the ED. A survey released by Elsevier Health showed that nearly 75% of healthcare workers plan to leave the field by 2025 (Bruise, 2022). Burnout and a potential mass exodus are not problems for the future, they are happening now and need to be addressed. The COVID-19 pandemic added additional stress, fatigue, and an overwhelming workload to ED nurses who were already working in an emotionally demanding unit (Celmece & Menekay, 2020).

This review did find some positive highlights to the COVID-19 pandemic. Raudenska et al. (2020) found that frontline healthcare workers directly treating COVID-19 patients felt a greater sense of control in their workplace during a challenging time. In a time where protocols were changing by the day, treating these patients gives the healthcare workers a sense of pride and control which decreased their level of burnout. Similarly, a study found that 85.5% of nurses

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surveyed scored themselves at a prominent level of personal accomplishment. This contributed to the nurses feeling proud to do what they could for COVID-19 patients but still experienced emotional exhaustion and depersonalization at high and moderate levels, respectfully (Jalili et al., 2020). The COVID-19 pandemic also created a sense of teamwork amongst ED personnel that was stronger than before. Working with familiar coworkers who understood what each other was going through built a sense of belonging that protected many staff's well-being. Having solid team dynamics in a high-stress environment, such as an ED in the middle of a pandemic, reduced workplace stress and prevented burnout (Sangal et al., 2020). Most studies found that the COVID-19 pandemic created exceptional amounts of burnout for ED nurses, however, it did not seem to effect nursing students the same way. While nurses were feeling anxiety, sadness, and anger, nursing students remained excited to begin their careers (Huang et al., 2020). New graduate nurses completed nursing school when the COVID-19 pandemic was at its peak. They had clinical experiences during these times, yet they remained hopeful about their future in beside nursing.

There was significant variability to the locations in which the studies analyzed were conducted; however, the U.S. did not complete nearly as much research as other countries. Among the studies mentioned above, only two were conducted in the U.S., leading to a lack of an anthropological review of literature. There were 22 million healthcare workers employed during the COVID-19 pandemic, yet there is very little research examining the effects of the pandemic on the staff (Laughlin, 2021). More research needs to be conducted in order to create positive solutions for ED nurse burnout in the U.S.

Conclusion

It is more evident than ever that there is significant burnout among ED staff, especially nurses, due to the COVID-19 pandemic. Factors associated with this phenomenon include frequent exposure to the novel virus, lack of PPE, being overworked and underpaid, and the uncertainty surrounding the overall trajectory of the COVID-19 pandemic (Zakaria et al., 2021). For example, Sheehan et al. (2021) found that 74% of ED staff reported feeling burnout due to the COVID-19 pandemic with occupational stress and emotional exhaustion being the main contributing factors. The sources of stress are well documented, but the solution is lacking. With proper support and a better understanding of the virus, burnout may be reduced among ED nurses.

A continuation of research is imperative to determine an adequate solution for burnout. Studies need to focus on preventive measures so that ED staff do not reach the level of stress and despair that is leading to burnout. Providing them with support and enhancing the team dynamic can be protective factors in reducing the incidence of burnout.

The COVID-19 pandemic has increased feelings of exhaustion, despair, and hopelessness leading increased burnout among ED staff (Mollica et al., 2021). Failure to establish preventive measures could lead to a mass exodus from bedside nursing and a potential complete collapse of hospital systems. Maintaining the physical and mental health of ED nurses has been highlighted due to the COVID-19 pandemic. The problem of burnout in the ED has been well documented; determining a solution is imperative. As Sheryl Sandberg (2022) once stated, “We cannot change what we are not aware of, and once we are aware, we cannot help but change.”

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