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Research Proposal

COVID-19 related Burnout on Patient Outcomes in Emergency Medicine Physicians

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Abstract
The United States healthcare must acknowledge and strategize sustainable methods to combat burnout as an emerging public health crisis that has been associated to "emotional exhaustion, fatigue, depression, anxiety, suicide, substance abuse, or impairment" (Wallace et al., 2009, p. 1714). Burnout as described by is a form of work driven emotional exhaustion, depersonalization, decreased sense of personal accomplishment, and specifically in healthcare not being able to provide for their patients (West et al., 2018). In healthcare, this distress has been linked to negatively impacting the healthcare system and patient care. Thus, the purpose of this study is to comprehend the current healthcare crisis on burnout levels, measure its relations to healthcare quality and delivery, and propose recommendations to ensure the safety of all stakeholders involved (i.e., physicians, nurses, patients, administrative staff).

Key words: COVID-19, Burnout, Physicians, Healthcare Administration.

Introduction

The coronavirus (COVID-19) pandemic has added and exacerbated the stress amongst healthcare workers. In particular, the Emergency Medicine (EM) department is at the forefront of the pandemic providing the highest and safest quality of care to its patients despite the lack of scientific knowledge to properly treat patients at the beginning of the pandemic in spring 2020. Prior to COVID-19, Emergency Medicine physicians showed a high prevalence of burnout, and put EM physicians at greater risk for burnout during the pandemic (Shanafelt et al., 2012). This burden of providing care to their patients; handling limited resources (i.e., PPE); preventing the spread to their friends and families; work staff shortages; and taking care of themselves significantly drains an individual physically (i.e., sleep deprivation) and mentally (i.e.,

depression, anxiety). Apart from COVID-19 factors, catalysts of burnout included excessive workloads, lack of work support, and loss of work meaning (West et al., 2018).
This study hopes to recognize burnout in healthcare professionals, including physicians and allied health staff. In addition, we hope to then swiftly identify the deficiencies in order to protect the welfare of the workforce in critical and stressful events that overwork and drain the healthcare system.

Literature Review

For this study, we utilized the California State University East Bay (CSUEB) library database to locate and identify the factors of physician burnout. We used the Academic Search Complete and Google Scholar to focus on peer-reviewed literature that focused on the components of burnout such as identifiers associated with burnout, implications of burnout in the healthcare field, and proposed methods of preventing burnout. This proposed research study will focus on understanding self-identified levels of burnout and its association with patient safety and satisfaction. Keywords to filter included but not limited to physician burnout, moral injury, self-care, quality, safety, patient medical error, and patient satisfaction.

Factors Associated with Burnout

Although healthcare burnout has been studied and investigated, the topic of providing appropriate protections for healthcare personnel came to the forefront due to the COVID-19 pandemic. The following section will discuss significant factors that are associated and lead to burnout, namely, excess workload, shortage of resources (i.e., equipment, staff), and loss of meaning of work. Although this analysis will not review into detail the various burnout contributing factors, we will mention some of these overlying factors within excess workload and loss of meaning. Work related contributors include loss of autonomy which equals decreased physician-patient time due to increased administrative requirements. Personal contributors include sleep deprivation, work-life imbalance, and over commitment. Lastly, organizational contributors to burnout include negative leadership, unachievable expectations, lack of rewards, and lack of collaboration (Patel et al., 2018).

Excessive Workload and Lack of Work Support/Resources

Previously shown in a nationwide study by Shanafelt et al., (2015), the results showed 54.4% of the US physicians reported at least one symptom of burnout when compared to 45.5% in 2011. Emergency physicians are the first to interact with patients, which easily can be stressful. The Emergency department is fast paced, chaotic and unpredictable of the demand of what patient will be admitted. In addition, emergency providers experience a high volume of patients, varying issues of illnesses and constant interruptions. Especially during the pandemic, with the unknown causes of COVID-19, all hospital organizations were in a serious medical crisis with inadequate preparedness for response to a pandemic. Many providers must adjust to the new protocol of infection control, safety, wearing full PPE, taking extra time with patients for ordering tests and ruling out diagnosis, utilizing telemedicine platforms with technical issues etc. It is notable to say for every hour spent with a patient, physicians are taking an additional one to two hours finishing their progress notes, ordering labs, reviewing medication and any test results without additional compensation (Patel et al., 2018).

Moreover, concerns were expressed amongst healthcare workers with lack of support in mental health of fear of high risk of infection, fear of contagion and spread to family members which increased the levels of stress and anxiety (Khajuria et al., 2021). Hospital organizations require meticulous and comprehensive documentation for every patient encounter which time spent at home is related to work (Patel et al., 2018). As stated by Panagioti et al., (2016), "leading drivers of burnout include excessive workload, imbalance between job demands and skills, a lack of control, and prolonged work stress" (p.196). Providers are mentally, physically, and emotionally exhausted. Burnout has been linked with lower work satisfaction, reduced productivity, and risk of medical errors and patient safety (Panagioti et al., 2016). Another study by Shanafelt et al., (2012), emergency medicine physicians were found to have the highest rate of burnout (65%) compared with physicians in general and the general US population. Burnout has been a well-known issue prior to the pandemic and providers have been working under excessive workload due to limited resources, longer shift hours, and hazard exposures to COVID-19.

Loss of Meaning from Work

Another factor of physician burnout is the lost meaning of work. The term was adopted by combat veterans as a diagnosis for post-traumatic stress, but in the healthcare field moral injury has been used to describe this precursor to burnout. Morale injury is described as the negative mental health impact when a physician violates their moral code to provide high-quality medical care. In the study by Chandrabhatla et al., (2022), they confirmed that moral injury was a predictive factor of burnout which was measured before and during COVID-19. The researchers noticed that during COVID-19, the increase in telemedicine decreased provider-patient interaction and being unable to treat patients with comprehensive and physical exams. The disconnection between patient and provider negatively impacts the provider for not being able to provide quality care and fulfilling their moral obligation to protect and serve the health community. Similarly, the lack of resources (i.e., PPE and life-saving devices) exacerbated morale injury in not being able to provide the resources to keep patients safe during COVID-19. From a structural standpoint, during this period of economic recession, hospitals are increasingly becoming profit and business-driven which creates an emphasis on quantity over quality (Talbot & Dean, 2018). These examples have contributed to burnout due to its emotionally exhausting and hypocritical impact physicians must consider providing the best healthcare.

Physiology Factors and Burnout

Healthcare workers were subjected to an increased workload that exposed them to occupational distress. In the study by Torrente et al., (2021), confirmed that young female doctors were more vulnerable and more burnout during the pandemic. As we already know, burnout can lead to deterioration of job satisfaction, low quality of care, and decrease productivity. A study conducted in Italy with 1,379 healthcare workers showed younger age and female gender associated with psychological impact of COVID-19 reporting; 49% experienced PTSD, 25% depression, 8% anxiety, 20% insomnia, and 22% reported high stress (Rossi et al., 2020). It is evident in the studies that the effects of COVID-19 have impacted providers and healthcare workers negatively, mainly more women than men (Miguel-Puga et al., 2021). Despite the knowledge of burnout amongst physicians, it is evident that in our research we will likely find females struggling with burnout symptoms more so than their counterparts.

Implications of Burnout

Burnout is an increasing issue within the medical field; this paper highlights the implications through the patients from their physicians. Brady et al., (2020) addressed the item response theory analysis, continued with implications from the scores from the Maslach Burnout Inventory, that scores from physicians coincide with patients affected by the inability to understand patients' feelings or being available to care for the wellbeing of some patients. Physicians exhibiting cynical traits and hopelessness within the workplace, consequently, suffer from mental illness, ultimately affecting patient care.

D'Onofrio (2019) continues with internal factors such as prestige, where risks of persisting mental and physical illnesses from lack of direct control from negative association demands is seen as a weakness or undermines their professional practice. With persistent symptoms of burnout, Winkel et al., (2018) found the increasing conflict between being a caregiver and caring for oneself, demonstrating the inability to cultivate the rapport necessary to connect with patients or have patients build trust in them as a physician. Sixteen percent of physicians indicated that they experienced a lack of respect from patients, with that and experiencing greater mental illness posing greater risk of danger for patients' mistakes in reasoning or decision making that can pose a risk of patient death (D'Onofrio, 2019). Leading to medical mistakes with poor decision making, which cultivates the perfect storm for burnout (D'Onofrio, 2019).

Although there is limited research for the impacts of COVID-19 pandemic burnout, there is still an ongoing concern for physician wellbeing. Addressing patient experience in emergency medicine is a daunting task with the inherent stresses of an unplanned visit, an acute illness, and doctors and staff unfamiliar to the patient. The Chekijian et al., (2021), furthered research on the impacts of the pandemic of patient experience for the pre, during, and post-COVID-19 with the sentiment of patient comments (Chekijian et al., 2021).

According to Chekijian et al., (2021), pre-COVID-19 patient satisfaction comments on competence skills for clinical staff, whereas, during and post-COVID-19 patient comments on the negative sentiments when receiving treatment. In another study by Melnikow et al., (2022), they used a two-time point wave surveying for measuring physician burnout, identifying increased second waves of burnout among physicians, associating that with decreased well-being association of worse quality of patient care.

Solutions for Managing Burnout

Though the research covered thus far has encompassed certain aspects of burnout, we will further examine interventions of burnout identifying systems and individual solutions that can be effective. We will address three common factors that cause burnout which include excessive workload, lack of support, and loss of meaning for the work. It is important to note that if some physicians are practicing self-burnout solutions, then the data will reflect changes in perceived burnout level. It is also important to note that although these solutions have been found effective, there are limitations due to structural and organizational solutions due to "short follow-up periods, a narrow focus on single interventions rather than combined approaches and relatively limited application of randomized controlled trial designs" (West et al., 2018, p. 521).

Excessive Workload

One of the primary physician burnout factors include excessive workload. A study by Pitts et al., (2012), found that during an eight-year study between 2001 and 2008 emergency

department (ED) visits increased by 1.9% each year, thus increasing work shifts and duty loads. Thus, proposed solutions on organizational level include duty hours limits, achievable work targets and goals; personal solutions include reducing employment to part-time. Duty hour limits have been thoroughly researched and standardized particularly for resident trainees that has shown to decrease the burnout score through the Maslach inventory (Busireddy et al., 2017). Although this regulation is only implemented through the Accreditation Council for Graduate Medical Education (ACGME) for trainees; thus, we can assume that applying this work hour limitation for attending physicians would prove the same result.

Lack of Resources and Support

California experienced an overwhelming intake of patients during COVID-19, which caused a lack of resources in personal protective equipment, breathing equipment and personnel. Hospital administrators and supervisors were not prepared for this pandemic. COVID prevented the resources that were set aside for training being redirected to other departments. There was concern for physicians' well-being during this unprecedented time. Requests were made to the federal government and local public health agencies for support and unfortunately, most of the equipment was distributed among other facilities.

This was a contributing factor that caused stress and anxiety to our physicians which led them to burnout and fatigue. In the five hospitals in Santa Clara County there were shortages in ventilators and respirators that caused physicians to make quick decisions on patients that would benefit from the ventilators and for those who did not show any signs of getting better, they were taken off the machines (Arvanitakis et al., 2021).

Lost Meaning of Work (Moral Injury)

Physicians upon graduation take an oath to nurture and fulfill their duty to provide the best healthcare for their patients and are emotionally connected with the patients they treat. The concept of moral injury has contributed to burnout due to the emotional conflict of the care they want to provide and what they can provide based on the circumstances they are given. In West et al., (2018), they acknowledge that there are several structural and individual implemented solutions that can be considered. For the structural category this includes, sharing organizational core values, goals, and objectives that cultivate a positive and motivated attitude amongst staff (van Dijk & van Dick, 2009). On an individual level, similarly, reassessing personal goals and values and staying true to them will be a reminder of the oath they spent years of intensive training to fulfill. Self-care and mindfulness have seen proven effects in improving and preventing burnout. Recommendations have been made to incorporate both individual and team-based care training to improve professional wellbeing and relationships with patients to deliver quality care (Sanchez-Reilly, 2013).

Hypothesis

We hypothesize that there will be greater or equal to 65% of ED providers in Santa Clara County Hospitals reported feeling burnt out during the pandemic via the Maslach Burnout Inventory survey.

Methodology

In this proposed quantitative research study, our team's purpose will be to evaluate how stressed and burnout physicians were during COVID-19. We chose to survey 500 physicians

from five hospitals in Santa Clara County, because there were a high number of patients experiencing unexplained flu-like symptoms that caused a high-volume intake in their Emergency Department and inpatient hospital admittance. We are hoping to receive at least a 50% response rate from the pool of physicians among the five hospitals who worked 12-to-24-hour shifts, and six to seven days a week (Ortiz et al., 2021).

As a group we decided the most effective and easy way of delivering our survey and receiving responses from our participants would be the usage of an online website – Sogolytics. This online multilingual tool will be private and secure when responding to the surveys. This process will allow us to be ADA compliant with real-time reports. Also, the information gathered from our participants will be protected and stored in one location. The surveys would be sent out on a quarterly basis, so we can monitor and compare the trend for one year. In addition, an automatic email would be generated 72 hours prior to remind physicians to complete the survey.

Our process will describe how many physicians remained patient focused while experiencing burnout and fatigue during an unprecedented time. The quantitative research along with our surveys will be beneficial when demonstrating how a realistic approach of surveying 250 female and 250 male physicians could be best used. Collectively, as a team the reason Maslach Burnout Inventory was chosen is because it is critical to know the well-being of a physician's solidity while providing services to those who need medical care (Rohland et al., 2004). The survey will consist of 22 items and focus on three subscale areas:

- Emotional Exhaustion (EE) in which will include nine items
- Depersonalization (DP) in which will include five items
- Low sense of Personal Accomplishment (PA) in which include eight items

In addition, the survey will allow physicians to reflect on their days of pre-COVID and compare it to post-COVID. The survey is measured on a 5-point Likert scale, 0 being never tired and 5 being tired every day - the following is the list of questions asked.

Between January 2020-March 2020, how burnt out were you?

Between March 2020 (national shelter in place mandate) and January 2021 (vaccines available), how burnt out were you?

Between January 2021 through December 2021, how burnt out were you?

Between January 2022 through present, how burnt out are you?

The data collected from our surveys, would give us a percentile of how many physicians took the time out to take our survey, provide their feedback, and give us an opportunity to compare their peer results.

Data Collection

According to D'Onofrio (2019), the greater number of physician burnout is shown as an estimated loss of $800,000 per physician for turnover within the healthcare industry. There was a need for gathering data upon the increasing reports of physician burnout trends in Northern California. Due to the impact of COVID-19 cases in Santa Clara County, further research was highly encouraged to improve support services for practicing physicians. Being that COVID-19 affected the hospitals, specifically emergency department and inpatient stays, this research group called upon the hospitals in Santa Clara County, which five consented to participate for 2020-2021. It was agreed upon that 100 physicians within these five hospitals were selected on the primitive basis of gender, male and female.

Physicians were likely to endorse feelings of being emotionally drained, used up, frustrated, and working too hard due to emotional exhaustion (Brady et al., 2020). Sara H. Cody,

MD wanted to see if there was a considerable spike in burnout due to emotional exhaustions throughout COVID-19 pandemic 2020-2021. Furthermore, conducting the patient survey in-line with the corresponding selected Santa Clara physician, would assist in the researchers' findings.

Physician and patient surveys were created in Sogolytics analytic platform, where both selected physicians and their patients could access from computer installed programs, personal cell phones, or cloud base systems. Since there was support from the Santa Clara County and five hospital administrators this research group didn't require gifts or incentives funding for participants' engagement. Researchers also didn't find it necessary to increase funding for travel expenses since the study was local for three of the four researchers.

These researchers would also like to add the limitation for this study. Since there was no information for wave 0 between January-March 2020, there will be a need for a continuing wave for the period 2021-2022 research. The distribution of rural vs city hospitals, including training experience and residents vs attendings. Although all selected hospitals in Santa Clara County, there are findings of lacking equal resources for the study due to specialization of hospitalization.

According to Melnikow et al., (2022), studies found that rates of physician burnout during the first year of the pandemic increased among the participants, highlighting the greatest numbers among the hospitals. With the strict guidelines for the study, it's difficult to define that variant of the period of 2020-2021 study due to the limited knowledge of COVID-19 for collecting data at that time. Lastly there were prolonged data collection periods of absorbing new patients for completing surveys due to unpredictable time of discharge (i.e., death or transfer to different units outside of the studies boundaries).

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