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Nature or Nurture: The Relationship between Self-Care, Personality Traits, and Burnout in Critical Care Healthcare Professionals

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Abstract

Burnout syndrome (BOS) is a psychological condition in which inordinate exhaustion, cynical perspectives, and a self-perception of ineffectiveness develop in response to chronic work stressors. The intrinsic stress of the critical care work environment predisposes critical care healthcare professionals to burnout. The sequelae of BOS are serious. Associated morbidities range from aches, pains, and headaches to chronic, pernicious maladies such as hyperlipidemia, coronary heart disease, type II diabetes, anxiety, and depression. Also, the presence of BOS affects healthcare professionals' intention to leave practice. Subsequently, BOS contributes to high turnover rates, potentially costing hospitals millions. This study sought to examine the effect of personality traits and self-care on reported burnout levels in critical care healthcare professionals. Forty healthcare professionals were surveyed from two community, non-teaching hospitals in the northeastern United States. The Maslach Burnout Inventory, DSCPI-90, and Mini-International Personality Item Pool were used to measure burnout, self-care, and personality traits, respectively. Self-care was negatively correlated with burnout (r=-0.159, p=0.33). On average, professionals practiced self-care 61% of the time. The personality trait Extraversion was negatively correlated with burnout (r =-0.144, p=0.38). The personality traits Agreeableness and Neuroticism had large positive correlations (r =0.520, p =0.001) and (r=0.645, p=0.000) with the BOS dimension emotional exhaustion. Findings help identify protective, individual factors against BOS. Further research is necessary to validate the degree to which critical care professionals practice self-care and the correlations between personality, self-care, and BOS reported in this study.

Keywords: Personality • Burnout • Self-care • Nursing • Healthcare professionals • Critical care

Introduction

In healthcare, burnout (BOS) is a global phenomenon, affecting healthcare professionals on every continent [1]. Both doctors and nurses are vulnerable to BOS. For nurses, BOS is among the top six reasons for leaving the profession [2]. By 2030, as a result of baby boomer retirement, BOS, and increasing turnover rates, a shortage of registered nurses is projected to spread across the United States [3]. As more nurses exit the profession, insufficient nurse staffing is associated with adverse patient outcomes, longer hospital stays, and an increased chance of patient death [4]. Concurrently, the cost for hospitals to replace one bedside nurse is estimated at $82,000 [5].

Like nurses, the risk and consequences of burnout posed to doctors is also significant. Physicians report a staggeringly high rate of burnout symptoms [6]. BOS costs the healthcare industry 4.6 billion dollars annually as a direct corollary of physician burnout [7]. Therefore, it is in the best interest of health care facilities and patients alike to mitigate factors contributing to healthcare professional burnout and subsequent turnover. In critical care units, where mandated nurse-to-patient ratios are becoming the norm, nurse retention is vital to patient safety [8]. BOS and subsequent turnover threaten adequate staffing [9]. Similarly, adequate patient to intensivist ratios are important to staff well-being and patient outcomes [10].

The rate of burnout in critical care professionals varies widely in the literature [11]. Prevalence rates of BOS range from zero (0%) to as high as 80% in the intensive care unit (ICU). The issue of burnout was dire enough for The American Association of Critical-Care Nurses (AACN) to release a call to action against burnout in 2016. Moss reviewed pertinent articles within the last ten years to develop the collaborative statement that acknowledged distinct job stressors affecting critical care nurses. The challenges of patient morbidity and mortality, strenuous daily work routines, and regular encounters with traumatic and ethical issues all contribute to the development of BOS in critical care nurses. The AACN (2016) reports that "critical care health care professionals have one of the highest rates of BOS within the profession (i.e., > 50%)" [12].

While the AACN predominately emphasized the risks posed to nurses, it should be noted that doctors also work under the stress associated with critical care and share a similar rate of BOS. Studies that have investigated BOS within critical care staff have failed to find a significant difference in burnout scores between nurses and physicians [13]. Physicians face challenging decisions concerning end of life care. Many feel pressured to act against their judgment and aggressively intervene for patients despite poor prognoses. This intrapersonal conflict, coupled with perceived responsibility for patient outcomes, increase a physician's risk for burnout [14,15]. Both critical care physicians and nurses are populations at risk for burnout due to job stressors. A dearth of literature investigating burnout in physician assistants (PA) and nurse practitioners (NP) exists. Further research of the PA and NP population is necessary [16]. Therefore, this present study aims to fill this gap and will explore associations between self-care, personality traits, and burnout levels in a variety of critical care healthcare professionals: nurses, physicians, NP, and PA.

Literature Review

Burnout

Burnout Syndrome (BOS) is a pervasive psychological condition. It affects a variety of occupations and has become a topic of increasing interest [17].

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Burnout is considered the delayed reaction that occurs as a result of chronic interpersonal stressors at work [18]. The first mention of BOS in scientific literature surfaced in 1974 when Herbert Freudenberger, an American psychologist, coined the term in his seminal study "Staff Burnout". He defined burnout as the consequences of extreme stress and high ideals on individuals in "helping professions", specifically psychologists, doctors, and nurses. He described burnout as "becoming exhausted by making excessive demands on energy, strength, or resources" in the workplace and intimated then that personality traits predispose people to develop burnout. He posited "that the dedicated and the committed" are most likely to burn out [19].

Maslach expanded on Freudenberger's work and developed a psychometric measure for burnout. The Maslach Burnout Inventory, still the most widely used tool for measuring burnout today, divides burnout into the three dimensions: exhaustion, depersonalization, and decreased personal accomplishment. Emotional exhaustion refers to a lack of energy, similar to that found in depression, as a result of work-related stress. Depersonalization, or cynicism, is the conceptual devaluation of people to objects rather than human beings. Individuals that score high in depersonalization are more likely to be cold and callous in their behaviors and attitudes towards others. Decreased personal accomplishment, or ineffectiveness, is a disposition to disparage oneself and one's achievements. It is also related to reduced productivity, capability, and morale [20].

Researchers of burnout initially posited that the work environment caused burnout - a result of job dissatisfaction, chronic stress, and a lack of energy and idealism stemming from working conditions [21,22]. Thus, early researchers purported that the environment was the culprit behind burnout [23]. However, under the environment hypothesis, a question remains: Why, under the same working conditions, do some employees burn out and others do not? Evidence that contradicted the environment etiology hypothesis of burnout came in the 1986 longitudinal study of teachers that failed to find a relationship between burnout and working conditions. Since then, BOS researchers have given more attention to the individual when studying the causes of burnout [24,25]. Fast forward 34 years, the American Association of Critical-Care Nurses (2020) now suggests building resilience in the individual through social networking, cognitive flexibility, self-care, and balance as their recommendation for preventing burnout in the professional [26].

The number of publications focused on BOS has skyrocketed in recent years. Most of the interest is in investigating causes, associated factors, and prevalence rates [17]. The reported rates of BOS, coupled with its detrimental consequences, suggest that it is a major societal issue [11]. The problem has grown so severe that the World Health Organization (WHO) listed burnout as an "occupational phenomenon" in its eleventh iteration of the international classification of disease (WHO, 2019) - a promising step in legitimizing the debilitating condition. Generally, BOS is a significant predictor of several comorbidities, including coronary heart disease, hyperlipidemia, and type II diabetes, as well as an increase in musculoskeletal pain, headaches, and prolonged fatigue. Psychologically, insomnia and depression are the main significantly associated consequences [27]. BOS is of particular concern within healthcare given its detrimental effects on job performance, job satisfaction, and patient outcomes [28,29].

The role of personality in burnout

The environmental stressors intrinsic to critical care environments contribute to the rate of burnout in critical care professionals [12,14,30]. Nurses and doctors largely rely on individual factors to prevent and attenuate the condition [31,32]. One factor at the level of the individual that has recently received considerable attention related to burnout is personality. Under the five-factor model of personality, personality can be reduced to five intercorrelated facets that account for an individual's fundamental disposition: openness, conscientiousness, extraversion, agreeableness, and neuroticism. Openness is an individual's appreciation for art, adventure, unusual ideas, curiosity, and variety. The trait is composed of two sub-elements, openness to culture and openness to experience. Open people are generally more artistic and creative [33]. Openness also commonly positively relates to intelligence quotient (IQ) test performance.

Conscientiousness is the efficiency and reliability trait. Conscientious people are self-disciplined and dutiful. High conscientiousness is often associated with resolve, planning, and achievement orientation. Extraversion is the social characteristic. Extraverts are assertive and talkative people; they are energized by interaction. Agreeableness is the tendency to be cooperative and compassionate. Agreeable people value social harmony and are willing to compromise individual desires for the benefit of the group. Neuroticism is the tendency to negative emotion. Highly neurotic people are prone to having irrational thoughts, difficulty coping with stress, and regulating impulses [34].

Data strongly suggests that personality trait structure is universal and unconfined by language or culture. Previous research demonstrates a consistent correlation between personality traits within the five-factor model and dimensions of burnout [24]. Within healthcare, conscientiousness, extraversion, and agreeable traits are negatively related to burnout development, while neuroticism is almost invariably, significantly associated with an increase in burnout and emotional exhaustion [12,24,25,35]. In a study of 134 Australian nurses working in the neonatal ICU, agreeableness and neuroticism were significantly related to burnout, with agreeableness inversely related, and neuroticism positively related [36]. In a study conducted in Greek ICUs, 149 physicians, and 320 nurses from 18 different ICUs were surveyed using the Eysenck Personality Questionnaire. The results indicated, again, a positive correlation exists between neuroticism and burnout, but, unlike Burr's results, it was extraversion that was negatively related to all three dimensions of burnout in Greek ICU doctors and nurses [37]. The implications of personality on burnout have become so well documented that researchers recommend including personality variables in future burnout research [24,38].

The role of self-care in burnout

While personality traits are an important element to consider, it is not the only individual factor to influence burnout. Self-care is a concept that has garnered increasing attention among healthcare disciplines for its integral role in personal health [15,39]. Self-care is the ability to achieve balance in all areas of one's life by participating in activities that promote harmony in the physical, psychological, intellectual, cultural, social, and spiritual self [26]. Within a variety of fields, self-care is touted for its role in preventing burnout [40,41]. A simple conceptual framework of self-care generalizable to a variety of conditions is Dorothea Orem's Theory of Self-Care. Orem posits that successfully meeting universal and developmental self-care requisites is an important pillar of primary care and prevention of ill health [42]. Moreover, a person's knowledge of potential health problems is needed for promoting self-care behaviors and that these behaviors, or lack there-of, are learned within a socio-cultural context. In which case, self-care is a set of learned behaviors specific to a potential health problem.

Perspective literature authored by veteran doctors and nurses attest to sound self-care practice as a vital aspect of their well-being and the longevity of their careers [15,43-45]. Sadly, previous investigations into the health promotion activities of nurses rendered dismal results, specifically among the critical care samples [46]. In their study, McElligot and colleagues used the Health-Promoting Lifestyle Profile II survey to measure health-promoting behaviors. They found areas of weakness in stress management and adequate physical activity among nurses, with medical-surgical nurses consistently outscoring critical care nurses in health-promoting practices. The lack of wellness promotion strategies in the nurses sampled in McElligot's study suggests that self-care is only speciously common knowledge. Instead, guided, organization-led interventions aimed at bolstering health and self-care may improve intervention effectiveness [47]. One nursing school within the United States recognized the necessity of self-care training prior to entering practice and prudently pioneered courses dedicated to self-care activities. The three-credit-course, "Caring for self," is an experiential course designed to facilitate collaboration between students and faculty in understanding the nature of personal mind/body/spirit connectedness is critical to healing and health. Students are assisted in making this experiential knowledge relevant to others. The course, guided by adult learning theory, introduces students to various self-care activities such as journaling, "treasure map" goal setting, and yoga. Students use and reflect on the self-care activities throughout

the semester. The course goal is to find one or more self-care activities that resonate with each student [39].

The new interest to include self-care courses into the undergraduate nurse curriculum raises an important question: Just how prepared are healthcare professionals to practice self-care? And furthermore, what are the repercussions of self-care deficits? Examining the relationship between self-care practice and burnout is an important step in distinguishing the individual variables driving the condition.

There is a large body of literature, regarding the individual predictors of burnout, that focus on the inextricable, innate personality characteristics that predispose healthcare professionals to the condition [24,25]. For example, neuroticism is a term that consistently surfaces in burnout research as a strong predictor of burnout. Neurotic individuals are considered negative, irrational, and at high risk of becoming burnt out [48]. Furthermore, given the robust long-term stability of personality measures, there is little that one can do to alter their temperament and associated susceptibility [49]. The personality camp thus produces a fixed prognosis with a bleak outlook for many. This perspective is well established and backed by ample evidence [12,24,25,35,50]. However, the role of personality traits in burnout may not be as decisive as researchers suggest. Recently, more attention has been given to the value of intervention at the level of the individual in the prevention of burnout [31]. Professionals within healthcare are speaking out with personal anecdotes that give credence to the efficacy of self-care as a mechanism to reduce burnout [15,51-53]. A study that concurrently correlates self-care practices and personality characteristics to burn out within a single population in the United States has not been conducted. Therefore, this study aims to fill this gap in the literature. This study will examine the effect of personality traits and self-care on burnout in critical care healthcare professionals in two community, non-teaching hospitals.

Purpose

The purpose of this study is to discern the prevalence of burnout within two non-teaching, community hospitals. This study will additionally assess the personality traits and self-care practices of critical care health professionals. Finally, the study will aim to determine which variable, self-care, or personality trait, has a greater correlation with BOS in this population. This study aims to answer the following research questions:

1. What is the prevalence of burnout syndrome within a cohort of critical care health professionals at two non-teaching, community hospitals?

2. Is there a correlation between personality traits as measured by the five-factor model and burnout syndrome?

3. To what degree do critical care healthcare professionals in non-teaching, community hospitals practice self-care?

4. Is there a correlation between self-care practice and burnout syndrome?

Methods

This is a multi-site, cross-sectional, quantitative study. The population is composed primarily of critical nurses with a secondary focus on critical care doctors, physician assistants, and nurse practitioners who currently work at two non-teaching, community hospitals within a hospital organization in the northeastern United States. Data was collected using the Maslach Burnout Inventory developed by Maslach, Jackson, Leiter, Schaufeli & Schwab, the DSCPI-90 developed by Denyes and the Mini IPIP developed by Donellan, Oswald, Baird, & Lucas. Demographic questions were asked related to age, experience, role, and work hours [20,54].

Design

This study was a cross-sectional, multi-site, quantitative study of nurses, doctors, physician assistants, and nurse practitioners at two community, non-teaching hospitals. Participants were surveyed using valid and reliable

instruments. The Denyes Self Care Practice Instrument (DSCPI-90) developed by Denyes was assessed in a previous study for its reliability and validity to measure self-care practices of adults [55]. The DSCPI-90 was used in this study to measure the self-care of nurses, doctors, physician assistants, and nurse practitioners. Personality was measured using the Mini-International Personality Item Pool by Donellan et al. [54]. The most widely used instrument for burnout, The MBI by Maslach et al. was used to measure burnout. A questionnaire developed by the researchers was administered to gather demographic data regarding age, gender, ethnicity, role, work experience, education, and weekly work hours [18]. The hospitals where data was collected serve predominately urban populations of southeastern Massachusetts. Thirty-one nurses, two physician assistants, two nurse practitioners, and five doctors were recruited in total from both sites. Each participant read a cover page that explained the study and granted implicit consent by filling out the questionnaire and submitting it. The confidentiality and security of participant data were maintained throughout and following data collection.

Sample

The total sample of forty-twowas comprised of thirty-two nurses, two physician assistants, two nurse practitioners, and five doctors from both sites. Participation was exclusive to registered nurses and board-certified physicians, physician assistants, and nurse practitioners currently practicing in a critical care unit. The sample focused on critical care nurses rather than doctors because, although both roles experience significant stress while caring for acutely ill patients, nurses spend the most time directly caring for patients [56] and are of greater abundance in the sample. No other healthcare workers were included in this study.

Procedure

The study received Institutional Review Board (IRB) approval from the University of Massachusetts Dartmouth, which also serves as the IRB for Southcoast Hospitals Group, where the data was collected. Participants were informed of the study's purpose and procedures in a cover letter and that completing and submitting the questionnaire constituted implicit consent. The questionnaires were disseminated in-person to nurses, nurse practitioners, physician assistants, and physicians who were currently working on a critical care unit.

Instruments

Maslach Burnout Inventory: The level of burnout was measured using the Maslach Burnout Inventory (MBI) developed by Maslach, Lieter, Shaufeli& Schwab. The MBI is the most widely used burnout tool today. Instrument validity and reliability have been reported in numerous studies [57]. Burnout is described as a psychological state characterized by emotional exhaustion, depersonalization, and a reduced sense of personal achievement. Emotional exhaustion refers to a decrease in energy and the notion that one's emotional resources are expended in response to excessive psychological demands. Depersonalization is considered the reduced valuation of people to objects rather than human beings, as indicated by cynical, cold, or apathetic attitudes and behaviors. Diminished personal accomplishment represents a disposition to evaluate oneself negatively because of failure to produce desired.

The inventory consists of 22 items. Participants answer based on how frequently each item is experienced, never, a few times a year or less, once a month or less, a few times a month, once a week, a few times a week, or every day. Scores are tallied across the three distinct subscales: emotional exhaustion, depersonalization, and personal accomplishment. While burnout has been a popular topic in psychological literature and can be accurately measured along these three dimensions, an official burnout cut point has not been established. However, evidence suggests that high levels of emotional exhaustion (mean score of 3 or higher) can distinguish the clinically burned out from non-burned out. The MBI has been validated for use in healthcare professionals.

Mini-International Personality Item Pool: Personality traits wereassessed under the five-factor model with the Mini International Personality Item Pool developed by Donellan et al. The 20-item Mini IPIP

distilled the most valid items for each personality dimension from the 50 item IPIP FFM data set made available by Goldberg. The advantage of a shorter personality metric is two-fold. Studies that include several, time consuming surveys risk fatigued participants submitting spurious responses. The 20-item Mini IPIP is a more concise survey that reduces this risk. Similarly, surveys asking redundant questions are susceptible to surveyor fatigue, as opposed to the distinct nature of the items in the Mini IPIP. In a five-part study, the Mini IPIP garnered high test-retest correlations and respectable internal consistencies(r >.60 across all five studies). It is important to note that the Mini IPIP internal validity coefficient is comparable to the 50 item IPIP FFM thus suggesting similar predictive validity. The instrument was validated and deemed reliable after a five-part study surveyed over 2,500 college students [54].

DSCPI-90: Self-Care practice data was gathered using the Denyes Self-Care Practice Instrument – 90. The survey consists of 18-items designed to assess the multiple facets of self-care practice. Questions regarding nutrition, exercise, rest, socialization, and productivity are posed. Participants were instructed to select a number from 0 to 100 that best depicts how frequently they practice the behavior described in each item. A selection of 100 represents fulfilling the behavior all of the time, while 0 would delineate that the participant never practices the behavior. A visual scale is available for reference beside the blank space in which to fill in the percentage. Self-care practice scores are calculated by computing the average of the 18 items into a whole number. Earlier studies have reported reliability coefficients as high as 0.92 [55].

Demographics: Generaldemographic information was obtained using a researcher-developed tool. Participants were instructed to circle the answers that reflected their age, role, number of years in their role, number of years in critical care, number of hours worked weekly, and the highest degree they've obtained. Questions regarding ethnicity and gender were also asked with a write-in option for "other" provided. 40 of the 55 invited critical care health professionals returned surveys for a response rate of 73%. The sample was mainly Caucasian (85%), female (58%), and between the ages of 20-39 (63%) with 1-10 years of experience in critical care (63%). Nearly half the participants (n=19) worked 37-48 hours per week. The sample was predominately composed of nurses who have attained a BSN.

Data Analysis

Data were analyzed using Statistical Package for Social Scientists (SPSS) version 25. Data were analyzed for skewness and outliers. Reliability was analyzed for all instruments. Pearson analysis was used to answer research questions 2 and 4. Descriptive statistics were used to answer research questions 1 and 3 (Table 1).

Results

Burnout Frequency

Frequency analysis was used to answer research question 1. Burnout, as defined by Maslach and colleagues, was present in nine participants (n=9, 22.5%). All nine were Caucasian. There were: six (n=6, 19%) nurses, two (n= 2, 100%) physician's assistants, and one (n =1, 20%) doctor who met the cut point for burnout. Two of the nine were men, while seven were female. Burnout was evenly distributed by age in the sample. Two of the nine were within the age bracket 20-29, and two were 30-39. The age bracket with the most burnout was 50-59, with three participants, and the age bracket of 60+ with two participants. A majority of the burned-out population in the sample, six out of nine (66%), were mid-career professionals having between 6-20 years of experience in their role. Almost half of the burnout cohort, four of nine, worked a standard 37-48 hours per week, two worked 49-60 hours per week, and three met part-time criteria working 25-36 hours per week.

Personality traits

Data regarding personality was normally distributed. A Pearson correlational analysis was used to answer research question 2. Results regarding personality

Table 1. Demographic characteristics of participants.

Demographic Characteristics of Participants	n	%
Age		
20-29	12	30
30-39	13	32.5
40-49	6	15
50-59	7	17.5
60+	2	5
Gender		
Female	23	22.5
Male	9	57.5
Ethnicity		
American Indian	1	2.5
Asian	3	7.5
Black	1	2.5
Caucasian	34	85
Other	1	2.5
Professional Role		
Nurse	31	77.5
Nurse Practitioner	2	5
Physician's Assistant	2	5
Physician	5	12.5
Number of Years in Role		
1-5	11	27.5
6-10	10	25
11-15	4	10
16-20	8	20
21-25	2	5
26-30	2	5
31-35	1	2.5
36-40	1	2.5
Years in Critical Care		
1-5	15	37.5
6-10	10	25
11-15	6	15
16-20	7	17.5
26-30	1	2.5
Degree		
AD	2	5
BSN	23	57.5
RN-BSN	5	12.5
MSN	1	2.5
PA	2	5
DNP	1	2.5
MD	5	12.5
Hours Worked Per Week		
25-36	11	27.5
37-48	19	47.5
49-60	8	20
60+	1	2.5

traits and burnout are displayed in Table 2. Agreeableness was the only personality trait significantly correlated with BOS, as defined by Maslach [18]. Agreeableness had a strong correlation with burnout syndrome (r= 0.834, p < 0.05). Positive relationships existed to some degree between all personality traits and the emotional exhaustion dimension of burnout. Neuroticism and agreeableness had strong correlations with emotional exhaustion of (r=0.645, p= 0.00 and r =0.520, p= 0.001, respectively). Also, neuroticism and agreeableness had a moderate positive correlation with depersonalization of (r =0.236, p=0.142 and r =0.288, p=0.071, respectively). Conscientiousness had a moderate positive correlation with emotional exhaustion (r =0.257, p=0.110). Extraversion had a moderate negative correlation with depersonalization

(r=-0.297, p=0.072). Extraversion also had a slight positive correlation with emotional exhaustion (r =0.175, p=0.281). Openness was the least correlated with emotional exhaustion (r=0.150, p=0.356) yet most correlated, more so than self-care or any other personality trait with depersonalization (r =0.351, p=0.026) (Table 2). None of the personality constructs had a significant correlation with personal accomplishment in this sample.

Self-care and burnout

Self-care practices varied widely in the sample. Scores ranged from 22.35 and to 92.94, representing the percentage of time self-care practices were completed. Descriptive statistics was used to answer research question 3. Between professions, self-care practice scores differed. The mean score nurses recorded on the DSCPI-90 was 60.82 (± 17.25). Nurse practitioners scored the highest average with 72.55 (± 1.11). Physician's assistants recorded the lowest mean scores with 54.71 (± 7.49). While physicians scored just below nurses at 59.76 (± 9.22). The mean self-care score of all four cohorts was 60.97 (± 15.75) overall. Correlational analysis was used to answer research question 4. A moderate negative correlation existed between emotional exhaustion and self-care (r=-0.297, p =0.124). Self-care and depersonalization were weakly related (r=-0.44, p=0.789). Personal accomplishment correlated most with self-care (r=0.172, p=0.42) than any other variable examined in this sample. Finally, burnout, as defined by Maslach, had a weak, negative relationship with self-care (r= -0.159, p=0.89) (Table 3).

Discussion

The aim of this study was to discern the rate of burnout in critical care health professionals in two community, non-teaching hospitals within one hospital group. Frequency analysis revealed that 23% of participants overall met burnout criteria. This figure falls within the lower end of the range found in previous studies investigating burnout in critical care professionals [50]. The highest rate of burnout within a single profession was reported by physician assistants with 100%, followed by physicians at 20% and the lowest levels reported by nurses with 19%. Nurse practitioners were the only profession not represented in the burn out cohort. The results suggest that critical care professionals within community non-teaching hospitals have similar rates of burnout to rates of burnout in other settings.

Another focus of the study was to investigate the relationship between the personality traits within the five-factor model, namely conscientiousness, neuroticism, agreeableness, extraversion, and openness, and burnout. A correlational analysis discovered that neuroticism and agreeableness had a significant positive correlation with emotional exhaustion – the component of the MBI responsible for burnout. Openness had a significant positive correlation with depersonalization. Conversely, extraversion had a negative correlation with depersonalization. The results regarding neuroticism were unsurprising given that neurotic individuals are more prone to experience negative emotions, worry, and generally cope less successfully with stressors; also, the strong positive correlation is consistent with the results of previous studies in neonatal intensive care nurses, critical care nurses and oncology nurses [12,25,36].

Likewise, extraversion negatively correlating with depersonalization is a result that has been demonstrated in previous studies as well [25]. Extraverted individuals are talkative, enthusiastic, and assertive, sociable, upbeat, and have a commanding demeanor that is likely conducive to forming rewarding relationships with patients.

The results of agreeable participants in this study were unanticipated. Agreeableness was the only personality trait correlated with BOS, as defined by Maslach, in this study. This finding contradicts previous studies that found agreeableness to be a protective trait against burnout [12]. Individuals high in agreeableness are friendly, cooperative, and generally exhibit prosocial behavior [58]. Furthermore, agreeable people more accurately infer the emotional states of other people compared to their less agreeable counterparts. Given the positive descriptors associated with agreeable people, why then did our sample demonstrate such strong correlations between burnout and agreeableness? One possibility is that agreeable people, who are less assertive, have difficulty asking for time off or refusing overtime shifts. The inability to maintain an adequate work-life balance has been linked with BOS in previous research. There is also a direct correlation between empathy, a cornerstone of agreeable people, and feelings of sadness and guilt that might explain why agreeable doctors and nurses recorded higher scores in emotional exhaustion and depersonalization [59]. However, this finding requires further study in a larger, more heterogeneous population.

Another unexpected, significant correlation was found between openness and depersonalization. Open individuals are construed as imaginative, intelligent, and having a wide range of interests. Previous researches on personality and burnout have found that openness to experience tends to relate negatively to depersonalization [38]. Furthermore, openness to experience has been found to predict empathy scores in medical students [58,60] and empathy is consistently negatively related to depersonalization [61]. In spite of the overwhelming evidence against our result, one potential explanation for the relationship between openness and depersonalization in our study is interplay between openness and organizational characteristics or some other moderator that is unknown at this time. Future research should investigate the effects of organizational culture on dimensions of burnout in open individuals.

This study also sought to discern the self-care practices of critical care health professionals at a community hospital, and if a relationship between self-care and burnout existed. The mean score on the DSCPI-90 was 61 and a standard deviation of 15 between the four cohorts suggesting that healthcare professionals moderately practice self-care. Compared to volunteer female caregivers caring for an elderly family member, surveyed in the previous study utilizing the DSCPI-90, healthcare professionals scored, on average, only 2 points more in self-care practice than the female caregivers. The relationship between self-care practice and dimensions of burnout was not statistically significant. Nonetheless, nurse practitioners, who scored the highest on self-care, had the lowest rate of burnout by profession (0%), while physician assistants who scored the least on self-care had the highest rate of burnout by profession (100%). Given that this is the only study that has investigated the self-care practices of healthcare professionals using the DSCPI-90, more research is needed to understand the relationship between self-care practice and burnout in healthcare professionals.

Table 2. Correlations of personality traits and burnout.

Variables	Emotional Exhaustion	Depersonalization	Personal Accomplishment	Burnout
Neuroticism	0.645∗∗	0.236	-0.059	0.035
Conscientiousness	0.257	0.174	-0.005	0.021
Agreeableness	0.520∗∗	0.288	0.004	0.834**
Openness	0.150	0.351	0.009	-0.035
Extraversion	0.175	-0.287	-0.290	0.593

** p < 0.05

Table 3. Correlations of self-care and burnout.

Variables	Emotional Exhaustion	Depersonalization	Personal Accomplishment	Burnout
-Care	-0.247	-0.044	0.172	-0.159

Limitations

Although this study used reliable and valid instruments, some limitations exist. The Denyes Self-Care Practice Inventory-90 (DSCPI-90) has been validated on adults in previous studies; however, this study is the first to employ the DSCPI-90 to measure self-care in health professionals. Also, the Mini IPIP is a truncated version of the NEO PI-R and, in its brevity, has lower Cronbach alpha scores than the original. Furthermore, the homogeneity and size of the sample surveyed limits the study's generalizability. A larger, more diverse population could more comprehensively capture the relationships between self-care, personality, and burnout. This is especially true of our physician assistant, nurse practitioner, and physician cohorts, which constituted, in total, less than 25 percent of the entire sample, specifically 5 percent, 5 percent, and 12 percent, respectively. Also, the survey, comprised of three instruments, was long, and participants completed it while at work. Therefore, these conditions in concert may have caused surveyor fatigue. Finally, the study relied on self-report measures, and therefore, the potential of response biases should be considered. Future studies are needed to confirm the results of this study in regard to the self-care of healthcare professionals using the DSCPI-90. Peer analysis of participant's personalities may compensate for response bias on self-report personality measures [12,24,25,62].

Conclusion

The rate of burnout in critical care health professionals within two community non-teaching hospitals in this study was moderate. Personality is consistently a significant factor in dimensions of burnout and should be included in future studies. While self-care advocacy is a growing movement among health care professionals, there is little empirical data on its effect on burnout. In this study, self-care was moderately practiced in critical care health professionals. A Pearson analysis revealed that personality traits, specifically agreeableness and neuroticism, yielded the strongest relationships with burnout. Self-care was also correlated with burnout to a lesser degree. In response to the dearth of literature on self-care in healthcare professionals, this researcher recommends future studies employ the DSCPI-90 to measure self-care in healthcare professionals. Further research is required to determine the extent personality traits and self-care relate to burnout.

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