



# Associations between compassion fatigue and suicidality among healthcare workers in the United States

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## ABSTRACT

**Background:** The psychological well-being of healthcare workers affects not only their own health but also patient care quality, making it critical to examine the mental health needs of the healthcare workforce. While compassion fatigue (i.e., depersonalization, emotional exhaustion, and career dissatisfaction) and suicidality have been studied separately among healthcare workers, their relationship with each other remains understudied. This study investigates the associations between compassion fatigue and past-year suicidal thoughts, suicide planning, and suicide attempts among a diverse sample of healthcare workers.

**Methods:** We collected cross-sectional data from a sample of U.S. healthcare workers (N = 200). Logistic regression models examined relationships between compassion fatigue and past-year suicidal thoughts, planning, and attempts, separately. Final models controlled for gender and occupational setting (hospital vs. other).

**Results:** Suicidality was prevalent: 14 % of participants reported past-year suicidal thoughts, 6.0 % reported suicide planning, and 3.5 % reported a suicide attempt. Greater compassion fatigue was significantly associated with increased odds of past-year suicidal thoughts (OR = 1.10, 95 % CI: 1.04, 1.16), suicide planning (OR = 1.10, 95 % CI: 1.02, 1.19), and suicide attempts (OR = 1.10, 95 % CI: 1.01, 1.21). After controlling for gender and occupational setting, these associations remained significant for suicidal thoughts (aOR = 1.09, 95 % CI: 1.04, 1.16), suicide planning (aOR = 1.10, 95 % CI: 1.02, 1.19), and suicide attempts (aOR = 1.10, 95 % CI: 1.01, 1.21).

**Conclusions:** Findings suggest that higher compassion fatigue is linked to increased suicidality among healthcare workers, highlighting the need to address compassion fatigue as a potential risk factor.

In recent years, the healthcare industry has witnessed an alarming increase in suicidality, stress, and burnout among its professionals (Denning et al., 2021; Lacy and Chan, 2018; Melnyk et al., 2018; West et al., 2018). Several studies have demonstrated that some healthcare workers have higher suicide rates compared to the general population (Dutheil et al., 2019; Olsson et al., 2023; Schernhammer and Colditz, 2004). For example, compared to the general population, the suicide rate among physicians is approximately 40 % and 130 % higher for males and females, respectively (Schernhammer and Colditz, 2004). In addition, the COVID-19 pandemic has significantly worsened the psychological well-being of healthcare workers (Buselli et al., 2021), and challenges within the healthcare system will likely persist for years (Washington Post, 2023). There is much less information available about the suicide risks among the nearly 95 % of healthcare workers who are not physicians (Dutheil et al., 2019; Olsson et al., 2023).

Exposure to unhealthy working conditions in healthcare

environments can serve as a stressor, potentially leading to psychological distress, including burnout and compassion fatigue (Pappa et al., 2020). Compassion fatigue is a condition that affects healthcare workers who are continuously exposed to patients' suffering and traumatic experiences as well as other challenges within the workplace (Chatham et al., 2024; Rauvola et al., 2019). This emotional and physical exhaustion can lead to decreased empathy and compassion. According to LaRowe (2005), compassion fatigue is described as "a debilitating weariness brought on by repetitive, empathic responses to pain and suffering of others." The consequences of compassion fatigue extend beyond the individual, affecting service quality to patients, risk of medical errors, overall healthcare quality, and increasing operational costs due to higher turnover rates (Yates, 2020). Occupational burnout is a physical, mental, and emotional exhaustion resulting from work-related stress (Figley, 1995).

The chronic exposure to trauma and suffering inherent in healthcare

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professions leads to emotional exhaustion and burnout, key components of compassion fatigue (Figley, 1995).

Compassion fatigue includes a specific form of burnout, directly related to the emotional toll of caring for others. Studies have shown that burnout is strongly associated with increased rates of depression and anxiety, which are significant risk factors for suicidality. This, combined with high levels of stress, inadequate support systems, and personal vulnerability factors, may increase the risk of suicidality among healthcare workers (Figley, 1995).

In the United States, healthcare workers experience a higher risk of suicide compared to their counterparts in other countries. This heightened risk is likely driven by low job satisfaction and extended working hours, contributing to burnout (Dutheil et al., 2019; Wada et al., 2008). In the context of the current study, it is important to recognize how suicidality — ideation, planning, or attempts that happen prior to suicide deaths—is related to both suicide death as well as current and future quality of life. Previous suicide attempts and suicidal ideation are known to be some of the most significant predictors of future suicide attempts and deaths (McHugh et al., 2019; Riera-Serra et al., 2024). Additionally, suicidal ideation has been shown to be related to poor mental quality of life as well as a future deterioration in physical quality of life (Fairweather-Schmidt et al., 2016).

Moreover, the suicide rate among healthcare professionals is higher compared to those in non-health-related professions (Hawton et al., 2011; Olfson et al., 2023). Despite the increasing rates of suicide and compassion fatigue in the healthcare sector, there remains a paucity of literature that directly links compassion fatigue to suicidality among healthcare workers. This study examines the association between compassion fatigue and suicidality among healthcare workers.

1. Methods

1.1. Participants and procedure

We recruited participants working in different healthcare settings across the United States in March of 2022 (N = 200) through social media ads targeted at healthcare professionals. Our eligibility criteria included that participants must be at least 18 years old and currently employed in one or more healthcare settings, including the following: hospital, ambulatory or outpatient clinic, nursing or residential facility, social assistance program, and/or home healthcare. Participants also need to be able to read and understand the English language. After providing informed consent, eligible participants were asked to complete a 60-min online survey at any place of their choosing and all participants were compensated with a \$50 gift card. A total of 284 healthcare workers were eligible to participate in this study (N = 284), and 70.4 % agreed to participate and completed the survey. After carrying out sensitivity analyses, we found that there were no statistically significant differences in the screening variables (i.e., age, gender, work setting) between those who were eligible and participated and those who were eligible but did not participate (ps > 0.05).

This study protocol was approved by the Institutional Review Board of the University of Illinois Urbana-Champaign, and upon completion of the survey, all participants were provided with a list of resources, including national crisis hotlines and self-help groups. Additionally, information on how to contact the National Suicide Prevention Lifeline was embedded within the survey at several time points in which questions related to thoughts of suicide or self-harm were asked. The suicide-related questions in this study were taken from the National Survey on Drug Use and Health, a general population survey administered annually by SAMHSA. However, it is important to note that recent research by Coppersmith and colleagues (2022) demonstrated with real-time data that assessment of suicidal thinking does not increase suicidal thinking. Similarly, work by Bender and colleagues (2019) demonstrated that assessing suicide risk was not associated with any increases in distress or suicidality.

Our sample was composed of healthcare professionals from diverse occupational experiences and specializations, including lower-wage support roles (e.g., nursing assistants, dietary aides, administrative support staff), licensed practical nurses, registered nurses, psychologists, case managers, social workers, physical therapists, mid-level providers (e.g., nurse practitioners, physician assistants), physicians, pharmacists, dentists, and healthcare administrators. These healthcare workers reported working across a variety of occupations, including ambulatory/outpatient clinics, home healthcare, hospitals, social assistance programs, and nursing/residential facilities. The sample was racially and ethnically diverse and included healthcare workers from 28 different US states plus Washington, DC. The sample ranged in age from 19 to 58 years and included men (32.5 %), women (66.5 %), and non-binary people (1.0 %). Although the sample was mostly women healthcare workers, this is consistent with estimates of healthcare workers nationally (U.S. Census Bureau, 2021). Additional characteristics of the study sample are presented in Table 1.

1.2. Measures

1.2.1. Compassion fatigue

We used the compassion fatigue subscale of the Professional Quality of Life Scale (ProQOL; Stamm, 2010) to assess compassion fatigue. The ProQOL is a 30-item instrument comprising subscales on compassion fatigue, burnout, and compassion satisfaction used to evaluate worker's experiences in the last 30 days. Each item is assessed using a 5-point Likert scale, with responses ranging from 1 (Never) to 5 (Very Often). The higher the subscale score the greater the symptoms of compassion fatigue. Example items from the compassion fatigue subscale ( $\alpha = 0.86$ ) include "I feel as though I am experiencing the trauma of someone I have

Table 1  
Sample Characteristics (N = 200 healthcare workers).

|                                               | % (n) or mean ( $\pm$ SD) |
|-----------------------------------------------|---------------------------|
| Age, years                                    | 30.8 ( $\pm$ 7.3)         |
| Gender Identity                               | –                         |
| Man                                           | 32.5 % (65)               |
| Woman or non-binary/genderqueer               | 67.5 % (135)              |
| Race/Ethnicity                                | –                         |
| Non-Hispanic white                            | 54.5 % (109)              |
| Non-Hispanic Black                            | 17.5 % (35)               |
| Non-Hispanic Asian                            | 14.0 % (28)               |
| Non-Hispanic American Indian or Alaska Native | 1.0 % (2)                 |
| Hispanic or Latinx                            | 10.0 % (20)               |
| Other                                         | 3.0 % (6)                 |
| Education                                     | –                         |
| High school diploma or equivalent (GED)       | 3.0 % (6)                 |
| Some college (no degree)                      | 5.0 % (10)                |
| Associate's/Other Technical 2-year degree     | 14.0 % (28)               |
| Bachelor's/Other 4-year degree                | 35.5 % (71)               |
| Graduate or Professional degree               | 42.5 % (85)               |
| Family Income                                 | –                         |
| Less than \$10,000                            | 0.5 % (1)                 |
| \$10,000 - \$19,999                           | 3.5 % (7)                 |
| \$20,000 - \$29,999                           | 2.5 % (5)                 |
| \$30,000 - \$39,999                           | 4.5 % (9)                 |
| \$40,000 - \$49,999                           | 10.0 % (20)               |
| \$50,000 - \$74,999                           | 19.5 % (39)               |
| \$75,000 - \$99,999                           | 20.0 % (40)               |
| \$100,000 - \$149,999                         | 24.0 % (48)               |
| \$150,000 or more                             | 15.5 % (31)               |
| Years in Job                                  | –                         |
| Less than 1 year                              | 14.5 % (29)               |
| 1–5 years                                     | 61.0 % (122)              |
| 6–10 years                                    | 17.5 % (35)               |
| 11–20 years                                   | 6.0 % (12)                |
| More than 20 years                            | 1.0 % (2)                 |
| Hospital Setting                              | –                         |
| No                                            | 46.0 % (92)               |
| Yes                                           | 54.0 % (108)              |

SD = standard deviation.

helped,” “As a result of my healthcare work, I have intrusive, frightening thoughts,” and “I avoid certain activities or situations because they remind me of frightening experiences of the people I help.” Participants are asked to rate the frequency with which they experience various emotional states, feelings, and thoughts related to their work.

1.2.2. Suicidality

We assessed participants’ past-year suicidal ideation, suicide planning, and suicide attempts. Consistent with other research (e.g., Hoopsick and Yockey, 2023), we evaluated past-year suicidal ideation using the following question: “At any time in the past 12 months, up to and including today, did you seriously think about trying to kill yourself?” Response options included “Yes” and “No.”. For participants who reported past-year suicidal ideation, we asked the following question: “During the past 12 months, did you make any plans to kill yourself?” with response options of “Yes” or “No.” Those who did not endorse past-year suicidal ideation were coded as “No” for past-year suicide planning. Participants who endorsed past-year suicidal ideation were also asked the follow-up question: “During the past 12 months, did you try to kill yourself?” with response options of “Yes” or “No.” Participants who did not endorse past-year suicidal ideation were coded as “No” for past-year suicide attempts.

1.2.3. Covariates

**Gender Identity:** All participants self-reported their gender identity. Considering the gender differences in the rate of suicide, we controlled for participants’ self-reported gender in all adjusted models. Some research suggests an association between levels of compassion fatigue and gender, indicating that women are more susceptible to compassion fatigue than men.

**Type of Healthcare Setting:** Work-related stress and burnout are prevalent across all healthcare settings (Green et al., 2020), but growing evidence suggests that those working in hospital settings may be made particularly vulnerable (Buran and Altun, 2021; Lasater et al., 2021; Sanghera et al., 2020; Shah et al., 2021). We included the type of healthcare setting (i.e., hospital setting vs. non-hospital setting) in all adjusted regression models.

1.2.4. Data analysis

First, we used descriptive statistics to characterize the study sample. Second, we examined the relationship between compassion fatigue and the three measures of suicidality (i.e., past-year suicidal thoughts, planning, and attempts), separately, using logistic regression models. Odds ratios (ORs) and 95 % confidence intervals (CIs) are reported. Finally, we added gender identity and hospital setting as covariates to all regression models and reported adjusted odds ratios (aORs) and 95 % CIs.

2. Results

2.1. Descriptive results

Suicidality was markedly prevalent among our study sample. The prevalence of past-year suicidal thoughts was 14.0 %, followed by suicidal planning at 6.0 % and suicidal attempts at 3.5 % among our population. Among these healthcare workers, the mean ( $\pm$  standard deviation) compassion fatigue score was 23.4 ( $\pm$ 7.4), which corresponds to an average level of compassion fatigue (ProQOL; Stamm, 2010). Individual compassion fatigue scores ranged from 10 (low level of compassion fatigue) to 48 (high level of compassion fatigue).

2.2. Effects of compassion fatigue on suicidal thoughts

Among this sample of healthcare workers, greater compassion fatigue was significantly associated with an increased likelihood of endorsing past-year suicidal thoughts (OR = 1.10;  $p < 0.01$ ; Table 2).

Table 2

Effects of compassion fatigue on past-year suicidal thoughts, suicide planning, and suicide attempts.

|                    | Suicidal Thoughts   |                            | Suicide Planning   |                            | Suicide Attempts   |                            |
|--------------------|---------------------|----------------------------|--------------------|----------------------------|--------------------|----------------------------|
|                    | OR (95 % CI)        | aOR <sup>a</sup> (95 % CI) | OR (95 % CI)       | aOR <sup>a</sup> (95 % CI) | OR (95 % CI)       | aOR <sup>a</sup> (95 % CI) |
| Compassion Fatigue | 1.10** (1.04, 1.16) | 1.09** (1.04, 1.16)        | 1.10* (1.02, 1.19) | 1.10* (1.02, 1.19)         | 1.10* (1.01, 1.21) | 1.10* (1.01, 1.21)         |

\* $p < 0.05$ ; \*\* $p < 0.01$ ; OR = odds ratio; aOR = adjusted odds ratio.

<sup>a</sup> Adjusted models control for gender and hospital setting (yes/no).

After controlling for the effects of gender and work setting, this association remained significant (aOR = 1.09;  $p < 0.01$ ).

2.3. Effects of compassion fatigue on suicide planning

Greater compassion fatigue was also associated with higher odds of past-year suicide planning in both unadjusted (OR = 1.10;  $p < 0.05$ ) and adjusted models (aOR = 1.10;  $p < 0.05$ ), with a 10 % increase in the odds of past-year suicide planning for every one-unit increase in compassion fatigue score.

2.4. Effects of compassion fatigue on suicide attempts

Similarly, greater compassion fatigue among these healthcare workers was associated with an increased odds of past-year suicide attempts (OR = 1.10;  $p < 0.05$ ), even after controlling for gender and workplace setting (aOR = 1.10;  $p < 0.05$ ).

3. Discussion

This study aimed to identify the relationship between compassion fatigue and suicidality among healthcare workers. Results from our analysis highlight a concerning prevalence of suicidality among healthcare workers, with a high proportion of our sample endorsing suicidal thoughts, suicide planning, or suicide attempts in the past year. A significant association was observed between compassion fatigue and all three measures of past-year suicidality, with participants who reported greater compassion fatigue being more likely to experience suicidal thoughts, planning, or attempts. Although the effect size is small, likely due to our relatively small sample size, the semi-continuous nature of the correlate suggests that every one-unit increase in compassion fatigue score is associated with approximately a 10 % increase in the odds of past-year suicidality. Therefore, this relationship should not be overlooked because it indicates that compassion fatigue may gradually and cumulatively impact an individual’s risk of suicidality. We adjusted for work setting because some studies have shown that healthcare professionals working in hospital settings are more likely to have a higher level of mental health symptomatology, such as burnout and exhaustion, which are key components of compassion fatigue (Lasater et al., 2021; Shah et al., 2021). However, even after adjusting for this, our results remained statistically significant.

Hawton et al. (2011) studied the risk of suicide in medical and related occupational groups in Denmark and identified an increased risk of suicidality across various specialties within the healthcare settings. Similarly, we found a concerning prevalence of suicidality, with our participants endorsing experiencing suicidal thoughts, plans, or attempts. However, our study went further to analyze the association between a widely recognized workplace experience that may increase vulnerability to suicidality among healthcare workers. Furthermore, disparities in job satisfaction across countries, particularly in the United States, where many healthcare workers report only moderate satisfaction, highlight the role of career dissatisfaction in contributing to

burnout, fatigue, and poor mental health outcomes among healthcare professionals (Dutheil et al., 2019). Additionally, our sample consisted of healthcare workers from diverse occupations within hospital and non-hospital settings, including psychologists, attendants, healthcare administrators, physicians, social workers, pharmacists, nurses, etc., indicating that issues like compassion fatigue, suicidality, and depression exist across a broad range of healthcare worker roles. Depression and compassion fatigue share overlapping symptoms, and studies show that compassion fatigue can contribute to the development of depressive symptoms over time (Hegney et al., 2014; Davies et al., 2023). However, it is worth noting that these two constructs are conceptually different, with compassion fatigue described as emotional exhaustion primarily from repeated exposure to others' suffering and trauma, whereas depression is characterized by cognitive or affective symptoms that may or may not be trauma-related (Figley, 1995; Malhi and Mann, 2018). To better understand how to address compassion fatigue and suicidality, it is important to identify protective factors that can mitigate these challenges. One study suggests key factors like resilience, social support, quality of life, and preventive intervention are essential for enhancing the well-being of healthcare professionals and improving overall job satisfaction and performance during high-stress periods (Lluch et al., 2022). Other studies include Bell and colleagues (2006), which examined what physicians in both academic and private practice found most fulfilling about their practice to look for protective factors in avoiding burnout. For academic and private practice physicians, the reasons were marginally different; it was shown that academic physicians were most satisfied by teaching, schedule, and variety, while private practice physicians were most satisfied by patient-provider relationships, co-workers, and schedule (Bell et al., 2006). Based on these satisfaction preferences, they suggested that, specifically for resident physicians and medical students, early career counseling that emphasized these satisfaction categories could be used as a preemptive measure to prevent burnout (Bell et al., 2006).

Recent studies have reported a significant rise in compassion fatigue across healthcare settings, and our findings suggest that incremental changes in compassion fatigue may be associated with increased suicidal risk among healthcare professionals. This emphasizes the need for proactive, evidence-based interventions, such as organizational support, workplace mental health services, peer support systems, and regular check-ins with staff to address these issues and prevent severe outcomes like burnout and suicide.

#### 4. Limitations

Our study has some limitations. First, we were limited in identifying which specific specializations or roles may be at the greatest risk for compassion fatigue-associated suicidality due to our sample size. This limitation highlights a research gap in understanding, as certain roles may experience unique stressors that increase their vulnerability. Another limitation of our study is that participants provided self-reports, which are subject to social desirability bias. Additionally, respondents who did not endorse past-year suicidal thoughts were not surveyed for past-year suicide planning and attempts, and some research has shown that suicide attempts are common among those who deny suicidal ideation, and single-item classifications may further bias these assessments (Bryan et al., 2022; Millner et al., 2015; Wastler et al., 2022). Finally, using cross-sectional data restricts our ability to establish causal relationships between compassion fatigue and suicidality, as data were collected at a single point in time. Therefore, we cannot determine whether participants experienced suicidality before developing compassion fatigue and vice versa. Also, we cannot rule out the possibility that other factors such as pre-existing mental health conditions, the timing of data collection (during the COVID-19 pandemic), or the combined effect with compassion fatigue contributed to the results.

#### 5. Strengths

Despite these limitations, this study also has notable strengths. First, we collected data from an occupationally, demographically, and socio-economically diverse sample of healthcare workers across the United States. Thus, our study stands out for its inclusivity, capturing the experiences of healthcare professionals across a wide range of occupational roles. This diversity enhances the generalizability of our findings, offering valuable insights into the broader relationship between compassion fatigue and suicidality within the healthcare workforce. Second, we examined these issues in the current pandemic era, making our study timely and relevant and contributing to the body of knowledge on the psychological well-being of healthcare workers. Third, while previous studies have separately examined compassion fatigue and suicidality, our study uniquely explores the relationship between these two factors among healthcare workers—an area that has been understudied.

#### 6. Conclusion and future directions

Our research provides insights into the relationship between compassion fatigue and the three measures of suicidality among healthcare workers. The incremental changes in compassion fatigue indicate that healthcare workers may be more at risk of suicidality if constantly exposed to occupational stressors within their workplace settings. Other studies show that repeated exposure to trauma-related stressors without appropriate coping mechanisms can transition into psychological outcomes, like depression and suicidality. For example, Duarte et al. (2021) found that among healthcare workers in Portugal during the COVID-19 pandemic, higher levels of depression were significantly associated with increased burnout. Longitudinal data is needed to track changes in these phenomena over time and better understand whether depression helps explain the association between compassion fatigue and suicidal thoughts or if compassion fatigue precedes the onset of depressive symptoms. This underscores the urgency to implement preventive measures to address compassion fatigue among healthcare professionals by taking a system-level approach to provide care and mental health support to healthcare workers. Future research should consider how certain demographic factors can contribute to these associations and also investigate compassion fatigue within specific healthcare specializations to identify populations most vulnerable to its effects, including the potential link to suicidality. By examining the unique challenges and stressors faced by healthcare professionals in these settings, researchers can gain a more nuanced understanding of how compassion fatigue manifests in various contexts. This targeted approach would help identify groups that require specialized interventions and enable the prioritization of resources. Findings from such studies could inform tailored support systems that address both individual and organizational factors, ultimately enhancing healthcare professionals' well-being and patient care. In conclusion, there is an urgent need to screen for and address the early onset of compassion fatigue among healthcare professionals.

#### CRedit authorship contribution statement

**Sylvia A. Okon:** Writing – review & editing, Writing – original draft, Formal analysis. **Carson C. Roan:** Writing – review & editing. **Rachel A. Hoopsick:** Writing – review & editing, Supervision, Project administration, Formal analysis, Data curation, Conceptualization.

#### Declaration of competing interest

None.

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