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The Moderating Role of Compassion Satisfaction and Resilience on Compassion Fatigue and Psychological Distress among Healthcare Workers

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ABSTRACT

Compassion and the healthcare system have consistently been viewed as intertwined. Healthcare Workers (HCWs) are expected to exhibit compassion and empathy while making reasonable decisions across various settings. However, daily challenges and exposure of HCWs to patients' suffering can hinder their ability to provide compassionate care. Their role may induce stress, potentially leading to compassion fatigue (CF). While the COVID-19 pandemic has raised attention to the mental health of those who have been impacted, little is known about HCWs' CF and other psychological distress in the recent post-pandemic days. The psychological impact of dealing with the uncertainty and the stress of the pandemic may continue, even though the immediate risk of viral contact has decreased. Hence, this study aims to examine the moderating role of Compassion Satisfaction (CS) and resilience on CF and psychological distress among Malaysian HCWs. This study hypothesized that: (H1) CF will significantly and positively predict psychological distress, (H2-H3) CS and resilience will moderate the relationship independently, (H4) CS and resilience will moderate the relationship jointly and (H5) there will be a significant difference in level of CF between professions. The study adopted a cross-sectional design. 226 HCWs were recruited through convenience and snowball sampling, and data were analysed using simple linear regression, moderation analysis and One-Way ANOVA. The results revealed that H1, H3 and H5 were supported, whereas H2 and H4 were not. The findings suggested that resilience may be prominent when external supports were not accounted for.

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Keywords: Compassion Fatigue, Compassion Satisfaction, Healthcare Workers, Resilience, Psychological Distress

Introduction

Background

Compassion and the healthcare system have consistently been viewed as intertwined. Healthcare workers (HCWs) are expected to exhibit compassion and empathy while making reasonable decisions across various settings. Empathy in healthcare pertains to the capacity of HCWs to understand patients' perspectives, essential for fostering a positive physician-patient connection and delivering effective care [1]. It constitutes the foundation of the physician-patient interaction and a crucial component in providing high-quality healthcare [2].

However, daily challenges and exposure of HCWs to patients' suffering can hinder their ability to provide compassionate care. The carer's role may induce stress, potentially leading to the interrelated ideas of burnout and Compassion Fatigue (CF). Studies show that burnout is thought to stem from work stress, whereas CF stems from the caregiving role, resulting in an inability to engage in compassionate interactions [3]. CF, or Secondary Traumatic Stress (STS), is the cost of caring for others or their emotional pain as a result of their efforts to alleviate the suffering of others [4].

Past studies have shown that the risk factors of CF included anxiety and depression, insomnia, and moral damage [7,8]. Meanwhile, the protective factors associated with CF were resilience, social support, and quality of life [9,10].

Problem Statement

While the COVID-19 pandemic has raised attention to the mental health of those who have been impacted, little is known about HCWs' CF and other psychological distress in the recent post-pandemic days [11,12]. Although the model of Compassion Satisfaction (CS) and CF exists, there is a relative lack of evidence to support it, as few studies have explored the relationships between resilience, CS, CF, and psychological distress [13].

The disruption of work-life balance, added with traumatic experiences from patient losses and delivering distressing news, cumulatively, underscore the profound impact of the pandemic on HCWs' well-being and often culminates in increased burnout and CF [14]. While numerous research studies have consistently documented a high prevalence of CF among healthcare

professionals, with nurses being the most affected, findings suggest that doctors recorded the highest mean CF score (M = 52.09), followed by home nurses (M = 49.23), and nurses (M = 48.82), in contrast to other helping professions [15,16].

It can be concluded that within HCWs, nurses and doctors act as the frontliners who are directly confronted with stressful and traumatic circumstances. Their direct and continuous engagement in high-intensity settings warrants emphasis, as opposed to other healthcare professions that primarily play predominantly supportive roles. Hence, this study aims to examine the moderating role of CS and resilience on CF and psychological distress among Malaysian HCWs.

Significance of Study

The pandemic's ever-changing nature warrants a need to explore current risks, protective factors and strategies to reduce CF among HCWs [12]. Given the limitations of carrying out a longitudinal study, this post-pandemic cross-sectional study has revealed Malaysian HCWs' CF and psychological distress patterns.

Another limitation is that some previous research did not use an HCW-specific questionnaire. This decision could affect the accuracy of the results since standard measures of resilience may not adequately capture HCWs' experiences. The current study employed a questionnaire specifically tailored to healthcare professionals, thereby enhancing the contextual relevance and precision of the assessment within healthcare settings.

There are also limited studies on how internal protective factors interact with CF, particularly in the Malaysian HCWs context. To address this, our study examines how resilience and CS relate to psychological distress among our HCWs, highlighting their potential buffering roles [17].

Research Questions

1. Does compassion fatigue predict psychological distress among healthcare workers?
2. Does compassion satisfaction moderate the relationship between compassion fatigue and psychological distress among healthcare workers?
3. Does resilience moderate the relationship between compassion fatigue and psychological distress among healthcare workers?
4. Do compassion satisfaction and resilience moderate the relationship between compassion fatigue and psychological distress among healthcare workers?
5. Does level of compassion fatigue differ between professions?

Research Objectives

6. To analyze the relationship between compassion fatigue and psychological distress among HCWs.
7. To analyze the moderating effect of compassion satisfaction between compassion fatigue and psychological distress among HCWs.
8. To analyze the moderating effect of resilience in the relationship between compassion fatigue and psychological distress among HCWs.
9. To analyze the moderating effect of compassion satisfaction and resilience in the relationship between compassion fatigue and psychological distress among HCWs.
10. To compare the level of compassion fatigue between professions.

Literature Review

Theoretical Framework

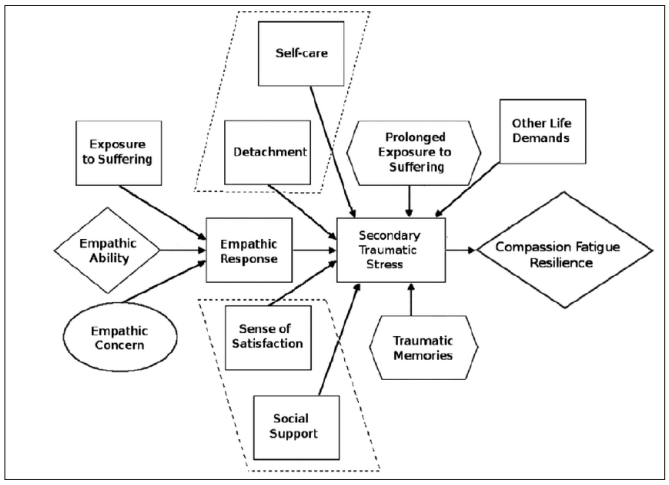

Figure 1: Theoretical Frameworks: Compassion Fatigue Resilience Model (CFRM).
Sources. [18]

The Compassion Fatigue Resilience Model (CFRM) by provides a framework for predicting and mitigating burnout, CF and vicarious trauma among healthcare and human service workers [18]. It highlights that CF is affected by both risk and protective factors. CFRM posits that CF arises from continuous empathic interactions that gradually exhaust emotional resources, particularly in the presence of personal stressors or trauma-related exposure.

The CFRM organizes CF risk factors into four main categories of stress: empathic response stress, trauma memory stress, overexposure to trauma, and stressful life events. Poorly managed stressors elevate vulnerability to CF. However, the model also proposes protective factors, including self-care, detachment, a sense of satisfaction, and social support, which mitigate CF in HCWs by preserving resilience. Similarly, compassion satisfaction (the fulfilment from helping others) plays a central role in counterbalancing stress and fostering resilience, allowing HCWs to sustain their empathy and prevent burnout over time [18].

When examining the relationship between CF, CS, resilience, and psychological distress, the CFRM theory suggests that both CS and resilience have the potential to mitigate psychological distress by protecting HCWs from the negative effects of CF.

Literature Review HCWs and CF

Numerous studies investigated the correlation between empathy and CF [1,19,20]. They validated that empathy is a fundamental factor in CF and proposed that nurses' empathetic capacity is significantly positively connected with CF; nurses exhibiting high levels of empathy are more prone to experiencing CF [19]. Furthermore, some studies indicate that empathy, particularly perspective-taking, serves as a predictor of CF among emergency department nurses [20].

Based on a systematic review conducted by [1], empathy levels among healthcare workers vary across professions and perspectives, with notable discrepancies between self-reported measures and patient perceptions. Among physicians, studies generally reported medium levels of self-reported empathy, while patient-perceived empathy was rated significantly higher, indicating strong satisfaction with physicians' kindness and personal attention. For nurses, it was found that nurses have high

empathy levels, with 84.1% of patients expressing satisfaction with nurses' empathy and kindness. Hence, it is clear that HCWs have a certain level of empathy that could pose a risk to developing CF.

CF and CS

CF refers to the emotional distress one may have following proximity to a trauma victim [3]. For example, engaging with patients and families affected by stress from dying and loss may expose hospice volunteers to the danger of CF [21,22]. found that 45.7% of HCWs in Sarawak were identified as at extremely high risk for CF. indicated that elevated CS correlated with moderate to low levels of CF and burnout among healthcare professionals. This finding suggests that CS may serve as a significant protective factor against the onset of psychological distress. posited that CS can mitigate the risk of CF and may also contribute to resilience as an inherent resource [3].

CS and Psychological Distress

According to, CF is significantly positively correlated with burnout, while CS has an inverse association with burnout. Stress and unpleasant emotions can lead to CF, whereas positive emotions and social interactions may foster CS. Reduced CS correlates with psychological stress, STS, and burnout [23-25]. In contrast, elevated levels of CS correlate with positive psychological factors, including resilience and the discovery of purpose in one's work. However, while the direct effect of CS towards CF is clear, there are past researchers who argued that solely focusing on CS might not be enough to mitigate the adverse effects of CF among HCWs [27-30].

Resilience and Psychological Distress

Moreover, some reviews indicated that enhancing innate resilience can elevate patient contentment, which correlates with nurses' satisfaction in palliative care environments [21]. A review on resilience in palliative health professionals indicates that resilience can enhance a palliative health professional's capacity to manage stress and diminish a person's susceptibility to the effects of subsequent stressors [31]. Consequently, a more comprehensive understanding of how to foster resilience and individual stress-management techniques for physicians and volunteers in palliative care environments is essential.

Research indicates that resilience and social support have a positive impact on reducing burnout related to COVID-19, enhancing mental health and quality of life, and decreasing anxiety and depression in individuals. Similarly, a systematic review indicated that HCWs resilience and social support benefited mental and psychological health [32]. also found that resilience may partially mediate the mental health benefits of social support for HCWs [33].

Another study suggests that providing support to nurses plays a vital role in enhancing their resilience, aiding them in effectively managing the challenging emotions they face in their profession [34]. Having adequate social support helps people cope with adversities in their lives and enhances people's health, well-being, and resilience, and reduces the risk of burnout [24,35,36].

CF and Psychological Distress

In recent years, CF among nurses has gained significant attention due to mounting evidence of its detrimental effects on their physical, psychological, and spiritual well-being. Research indicates that CF is linked to issues such as insomnia, exhaustion, depression, reduced job satisfaction, loss of hope, diminished capacity for self-care, decreased spiritual awareness, and impaired judgement [37,38]. Moreover, some studies have highlighted that CF among nurses negatively impacts the quality of patient care, including strained nurse-patient relationships [39], increased medical disputes, and a reduced ability to demonstrate empathy and compassion at work [38].

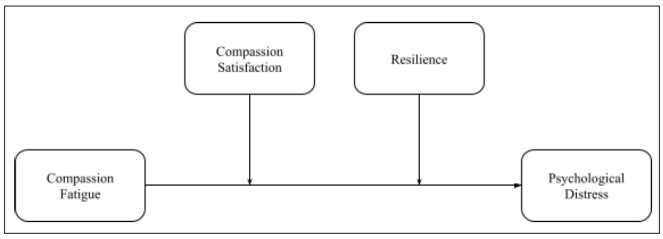

Figure 2: Conceptual Model.
Source. Authors' own work.

Definitions

CF

The concept of CF was first introduced by [40] to characterize a state of reduced capacity for compassion as a consequence of exhaustion caused by contact with the suffering of others [37]. The Professional Quality of Life Scale-5 (ProQOL-5) operationally defines CF as having two major components: STS and burnout. STS refers to "work-related, secondary exposure to people who have experienced extremely or traumatically stressful events", and burnout as feelings of hopelessness and difficulties in doing one's job effectively [3].

CS

The term CS arises when exposure to traumatic and distress-related events yields satisfaction or a sense of fulfilment stemming from the pleasure of assisting others and facilitating the alleviation of suffering [41]. It is operationally defined by ProQOL-5 as the pleasure that results from being able to do one's job well and helping others [3]. It is measured by items that explore feelings of fulfilment, purpose, and joy in caregiving work.

Resilience

Resilience refers to an individual's capacity to confront and overcome challenges and setbacks while maintaining a positive mindset and adapting to adverse circumstances. It is operationally defined by the Medical Professionals Resilience Scale (MeRS) as the ability to adapt and recover from challenging situations. It encompasses control, involvement, resourcefulness, and growth.

Psychological Distress

The American Psychological Association describes psychological distress as a spectrum of painful mental and physical symptoms commonly experienced through natural mood fluctuations [42]. The Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) operationalize psychological distress by targeting the key dimensions of depression and anxiety, respectively. The total psychological distress is a combination of PHQ-9 and GAD-7 (PHQ-ADS) [43].

Research Hypotheses

H1: Compassion fatigue will significantly and positively predict psychological distress among healthcare workers.
H2: Compassion satisfaction will moderate the relationship between compassion fatigue and psychological distress among healthcare workers.
H3: Resilience will moderate the relationship between compassion fatigue and psychological distress among healthcare workers.
H4: Compassion satisfaction and resilience will moderate the

relationship between compassion fatigue and psychological distress among healthcare workers.
H5: There will be a significant difference in the level of compassion fatigue between professions.

Methodology

Design

This study adopted a quantitative approach with a cross-sectional design. The moderation model in this study consisted of a predictor variable (i.e., CF), an outcome variable (i.e., psychological distress), and moderators (i.e., CS, resilience).

Participants

A sample size calculation was performed using G*Power software with a medium effect size (f2 = 0.15) and a significance level (α) of 0.05 with a power (1-β) set at 0.80, and the number of predictors was set at 6. The anticipated sample size for this study was 55.

To ensure that the study had achieved this target sample size, an assumed yield rate of 50% was adopted. A minimum of 110 participants was needed to ensure that 50% meet the inclusion criteria based on empathy screening. To account for an approximate 10% attrition rate, the target sample size was increased to 12.

The inclusion criteria included individuals who were 1) currently employed as nurses, housemen officers, or medical officers in government hospitals, 2) had moderate to high empathy based on a screening tool: The Jefferson Scale of Empathy (JSE), and 3) could understand English. The exclusion criteria will include individuals who have been clinically diagnosed with any mental health disorder, are undergoing psychotherapy, and are taking psychiatric medication.

A convenience and snowball sampling method was used to select participants based on the specified criteria. Invitation links were sent to HCWs personally, as well as utilizing social media platforms to find respondents who met the inclusion criteria.

Materials

Screening: Jefferson Scale of Empathy (JSE)

The JSE, developed by [44], is a commonly utilised instrument intended to assess empathy in healthcare practitioners and medical students. This scale utilises a seven-point Likert scale (1 = Strongly Disagree to 7 = Strongly Agree) to evaluate empathic orientation by measuring their capacity for perspective-taking and comprehension of patients' emotional states. Initial psychometric data and systematic evaluations confirm the scale's measurement attributes, encompassing concept validity and criterion-related validity.

• Section A: Demographic Information Form

Demographic Information Section A was designed to collect demographic information from the participants of the study. It consists of the gender, years of working experience, professions and location of the workplace.

• Section B: Professional Quality of Life-5 (ProQOL-5)

The ProQOL-5, developed by [3], is a validated measure of the positive and negative effects of working in a helping profession. It assesses three distinct dimensions: burnout, STS and CS. It consists of 30 items, divided equally among the three subscales.

Responses are recorded on a 5-point Likert scale (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Very Often). The measure was validated by [3] and demonstrated strong internal reliability, with Cronbach's alpha coefficients of 0.87 for CS, 0.72 for Burnout, and 0.80 for STS.

• Section C: Medical Professionals Resilience Scale (MeRS)

MeRS was developed by Rahman et al., defining resilience as a dynamic entity, and was validated in the Malaysian HCW population. MeRS is a 4-point Likert scale (rated 1-4; 1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree) comprising 37 items in total. It defines resilience based on an integrated resilience model in four domains, namely control, resourcefulness, involvement and growth. The measure demonstrates excellent internal consistency (α = 0.94) and has been validated specifically for Malaysian HCWs, ensuring cultural relevance.

• Section D: The Patient Health Questionnaire Anxiety and Depression Scale (PHQ-ADS)

PHQ-ADS is the combination of PHQ-9 and GAD-7 as a composite measure of depression and anxiety [43]. It has high internal reliability (Cronbach's alpha,.8 to .9).

PHQ-9, developed by Kroenke et al., is a widely used instrument for assessing the severity of depression symptoms. It consists of 9 items and each item evaluates the frequency of symptoms over the past two weeks, such as depressed mood, loss of interest, fatigue, and thoughts of self-harm. Responses are rated on a 4-point Likert scale (0 = Not at all, 1 = Several days, 2 = More than half the days, 3 = Nearly every day). This tool exhibits high internal consistency (α = 0.89–0.92) and has been validated across diverse populations, including healthcare workers.

GAD-7, introduced by Spitzer et al., is a 7-item self-report questionnaire with each item examines the frequency of symptoms over the past two weeks, including excessive worry, restlessness, irritability, and difficulty concentrating. Responses are scored on a 4-point Likert scale (0 = Not at all, 1 = Several days, 2 = More than half the days, 3 = Nearly every day). It demonstrates excellent internal consistency (α = 0.92) and has been validated across various settings, including those involving healthcare workers.

Procedures

Upon getting approval from Taylor's University research community board (HEC 2025/018), the survey was conducted via Google Forms in the English language.

Participants were first screened for their empathy level, and only those with moderate- to high-level empathy were eligible to proceed. Participants completed the informed consent form at the beginning of the online survey before proceeding to answer all four sections of the survey, which were Section A to Section D.

Invitation links were sent to HCWs personally, as well as utilizing social media platforms. Participants were allowed to withdraw from the study without consequence.

Once completed, participants had to click the submit button to record their responses and conclude the survey.

Data Analysis

IBM Statistical Package for Social Science (SPSS) 29 and PROCESS Macro Model 1 and 2 were used to conduct statistical analyses. A simple linear regression was conducted to test H1, PROCESS Macro Model 1 was used to test H2 and H3, PROCESS Macro Model 2 to test H4 and One-Way ANOVA to test H5.

Ethical Consideration

Approval for this study was sought from Taylor's University Ethics Board (HEC 2025/018) prior to commencement. Participants were required to provide informed consent before participating, ensuring they fully understand the study's purpose and procedures. To maintain privacy and confidentiality, all data were anonymized, with no direct identifiers included. The data was securely stored on a password-protected drive and deleted upon the study's conclusion. Participants had the right to withdraw from the study at any time without facing any consequences. An information sheet detailing the study's purpose was provided to all participants, as well as resources for mental health support to address any potential concerns arising from the study, in the debrief form.

Results

Preliminary Analysis Data Cleaning

Boxplot inspection for the STS variable indicated that cases 38, 53, 54, 57, 58, 59, 60, 61, and 62 were classified as mild outliers. Consequently, they were retained for analysis, as they did not substantially alter model estimation or violate statistical assumptions [45].

Assumption Testing

Normality: The Kolmogorov-Smirnov (K-S) test was used as a normality test. The normality assumption indicated that the variables were not normally distributed: all variables were ($p < .001$).

Skewness and Kurtosis: All skewness and kurtosis values fall within the acceptable threshold of –2 to +2 for skewness and –7 to +7 for kurtosis, as recommended by Kim (2013).

Square-Root Transformed: No transformations were applied to the predictor or moderator variables except for the dependent variable, which was square-root transformed to enhance the distribution of residuals and better satisfy the assumptions of linear regression [45].

Post Transformation Linearity: The linear trend in scatter plots suggested that the assumption of linearity was met.

Homoscedasticity: The residuals appeared randomly dispersed without any clear pattern, suggesting that the linearity and homoscedasticity assumptions were met.

Multicollinearity: The Variance Inflation Factor (VIF) of all predictors had values below the recommended cutoff of 5 (VIF = 1.97–3.99) and tolerance values above 0.2, indicating no serious multicollinearity issues among predictors.

Descriptive Statistics

Table 1: Frequency Distribution of Demographic

Variables	Categories	Frequency (N)	Percent (%)
Gender	Male	38	16.8
	Female	153	67.7
	Prefer not to say	35	15.5
Profession	Nurse	47	20.8
	Houseman Officer	48	21.2
	Medical Officer	131	58.0
Years of Experience	Less than 1 year	36	15.9
	Less than 5 years	129	57.1
	Less than 9 years	36	15.9
	More than 10 years	25	11.1
Location	Johor	16	7.1
	Kedah	10	4.4
	Kelantan	5	2.2
	Melaka	11	4.9
	Negeri Sembilan	11	4.9
	Pahang	5	2.2
	Perak	10	4.4
	Perlis	13	5.8
	Pulau Pinang	14	6.2
	Sabah	9	4.0
	Sarawak	10	4.4
	Selangor	95	42.0
	Terengganu	8	3.5
	Wilayah Persekutuan	9	4.0

Note: Total sample size = 226. Source. Authors' own work. **Study Variables**

Table 2: Descriptive Statistics of Study Variables

Variable	M	SD
CF	61.75	11.18
Burnout	32.75	7.47
STS	28.99	6.79
CS	34.56	6.37
Resilience	108.07	12.40
Depression (PHQ-9)	10.46	6.89
Anxiety (GAD-7)	8.36	4.39
Psychological Distress (PHQ-ADS)	18.82	10.96

Note. Total sample size = 226.
Source. Authors' own work.

Inferential Statistics

Table 3: Simple Linear Regression

95% CI							
Predictor	**b**	**SE**	**LL**	**UL**	**β**	**t**	**p**
CF	.117	.007	.103	.131	.74	16.45	<.001

Note. $R^2 = .547$, adjusted $R^2 = .545$, $F(1, 224) = 270.65$, $p < .001$. Outcome variable (sqrt_PD).
Source. Authors' own work.

Table 4: Multiple Linear Regression

95% CI							
Predictor	**b**	**SE**	**LL**	**UL**	**β**	**t**	**p**
Burnout	.211	.021	.171	.253	.727	10.08	<.001
STS	.016	.023	-.029	.060	.050	.690	.491

Note. $R^2 = .589$, adjusted $R^2 = .585$, $F(2, 223) = 159.47$, $p < .001$. Outcome variable (sqrt_PD).
Source. Authors' own work.

Table 5: One-Way ANOVA

	df	F	p
Between Groups	2	13.599	< .001
Within Groups	223	—	—
Total	225	—	—

Source. Authors' own work.

Table 6: Post Hoc Comparison

95% CI					
Group Comparison	**Mean Difference**	**SE**	**p**	**LL**	**UL**
Nurses vs. Housemen officers	10.28	1.90	< .001	6.53	14.02
Medical officers vs. Houseman officers	8.25	2.56	.002	2.58	13.92
Nurses vs. Medical officers	2.03	2.64	.722	-4.33	8.39

Source. Authors' own work.

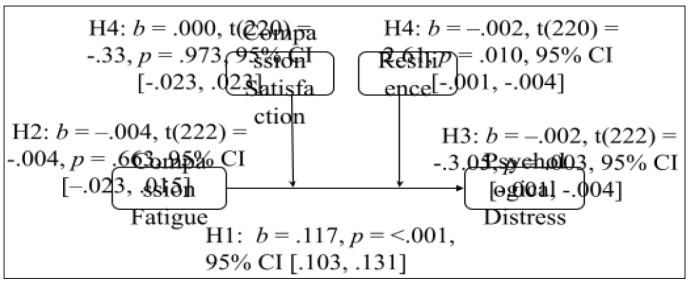

Figure 3: Statistical Diagram.
Source. Authors' own work.

Hypothesis 1

A simple linear regression was performed to predict psychological distress from CF. 55% of the total variance in the outcome variable, psychological distress, was explained by the predictor CF. The overall ANOVA model was significant, F(1, 224) = 270.65, p < .001. CF significantly and positively predicted psychological distress, b = .117, SE = .007, 95% CI [0.10, 0.13]. Hypothesis 1 was supported.

To further explore the contribution of CF subcomponents, a multiple linear regression was performed to predict psychological distress from burnout and STS. This resulted in a significant ANOVA model, F(2, 223) = 159.47, p < .001. 58.9% of the total variance in the outcome variable, psychological distress, was explained by the predictors overall. The individual predictors were examined further and indicated that burnout (t = 10.08, p < .001) was a significant predictor, whereas STS was not (t = .69, p = .49).

Hypothesis 2

A moderation analysis was conducted using Hayes' PROCESS macro (Model 1) to examine whether CS moderated the relationship between CF and psychological distress. The overall model, including CF, CS, and their interaction, is significant: R^2 = .552, F(3, 222) = 63.91, p < .001. However, the interaction effect of CF and CS on psychological distress was not significant after controlling for CF and CS, b = –.004, t(222) = -.004, p = .663, 95% CI [–.023,

.015], which indicates that CS did not significantly moderate the relationship between CF and psychological distress. Therefore, Hypothesis 2 was not supported.

Hypothesis 3

A moderation analysis was conducted using Hayes' PROCESS macro (Model 1) to examine whether resilience moderated the relationship between CF and psychological distress. Overall model including CF, resilience, and their interaction are significant: R^2 = .770, F(3, 222)

= 6260.90, p < .001. The interaction effect of CF and resilience on psychological distress was significant after controlling for CF and resilience, b = .002, t(222) = 3.05, p = .003, 95% CI [.001, .004], which indicates that resilience significantly moderated the relationship between CF and psychological distress. Therefore, Hypothesis 3 was supported.

Hypothesis 4

Dual moderation analysis (PROCESS Model 2) was conducted to examine whether CS and resilience moderated the relationship between CF and psychological distress. Overall model including CF, CS, resilience, and their interaction are significant: R^2 = .770, F(5, 220) = 166.91, p < .001. The interaction effect of CF and resilience on psychological distress was significant after controlling for CF, CS and resilience, b = .002, t(220) = 2.61, p = .010, 95% CI [.001, .004], which indicates that resilience significantly moderated the relationship between CF and psychological distress. However, the interaction effect of CF and CS on psychological distress was not significant after controlling for CF, CS and resilience, b = .000, t(220) = -.033, p = .973, 95% CI [–.023, .023], which indicates that CS did not significantly moderate the relationship between CF and psychological distress. Therefore, Hypothesis 4 was rejected; only resilience was a significant moderator.

Hypothesis 5

A one-way between subject ANOVA was conducted to compare the effect of profession on CF among nurses, houseman officers, and medical officers. There was a statistically significant difference in CF scores between professions, F(2, 223) = 13.599, p < .001. Nurses reported the highest CF (M = 65.106, SD = 10.90), followed by medical officers (M = 63.076, SD = 10.71), while houseman officers reported the lowest (M = 54.833, SD = 9.97).

Post hoc comparisons (Games–Howell) showed that both nurses (M = 65.11) and medical officers (M = 63.08) reported significantly higher levels of compassion fatigue than houseman

officers (M = 54.83, p < .01). There was no significant difference between nurses and medical officers (p = .722). Therefore, Hypothesis 5 was supported.

Discussion

Summary of Results Table 4

Summary of Results

Research Hypotheses	Results	Accepted/Rejected
Compassion fatigue will significantly and positively predict psychological distress among healthcare workers.	A simple linear regression was performed to predict psychological distress from CF. 55% of the total variance in the outcome variable, psychological distress, was explained by the predictor CF. The overall ANOVA model was significant, $F(1, 224) = 270.65$, $p < .001$. CF significantly predicted psychological distress, $b = .117$, $SE = .007$, 95% CI [0.10, 0.13].	Accepted
Compassion satisfaction will moderate the relationship between compassion fatigue and psychological distress among healthcare workers.	Overall model including CF, CS, and their interaction is significant: $R^2 = .552$, $F(3, 222) = 63.91$, $p < .001$. However, interaction effect of CF and CS on psychological distress was not significant after controlling for CF and CS, $b = –.004$, $t(222) = -.004$, $p = .663$, 95% CI [–.023, .015].	Rejected
Resilience will moderate the relationship between compassion fatigue and psychological distress among healthcare workers.	Overall model including CF, resilience, and their interaction is significant: $R^2 = .770$, $F(3, 222) = 6260.90$, $p < .001$. Interaction effect of CF and resilience on psychological distress was significant after controlling for CF and resilience, $b = .002$, $t(222) = 3.05$, $p = .003$, 95% CI [-.001, -.004].	Accepted
Compassion satisfaction and resilience will moderate the relationship between compassion fatigue and psychological distress among healthcare workers.	Overall model including CF, CS, resilience, and their interaction is significant: $R^2 = .770$, $F(5, 220) = 166.91$, $p < .001$. The interaction effect of CF and resilience on psychological distress was significant after controlling for CF, CS and resilience, $b = .002$, $t(220) = 2.61$, $p = .010$, 95% CI [-.001, -.004]. Interaction effect of CF and CS on psychological distress was not significant after controlling for CF, CS and resilience, $b = –.000$, $t(220) = -.033$, $p = .973$, 95% CI [–.023, .023]	Rejected
There will be a significant difference in compassion fatigue between professions	There was a statistically significant difference in CF scores between professions, $F(2, 223) = 13.599$, $p < .001$. Nurses reported the highest CF ($M = 65.106$, $SD = 10.90$), followed by medical officers ($M = 63.076$, $SD = 10.71$), while houseman officers reported the lowest ($M = 54.833$, $SD = 9.97$).	Accepted

Source. Authors' own work.

Discussion of Results Descriptive

The majority of participants identified as female (67.7%), which may be better understood by the fact that the overall healthcare workforce is 58.6% female (Human Resources of Health Country Profiles, 2021) and almost the majority of the nurses in Malaysia are female [46]. The majority consisted of medical officers (58.0%), and the predominant group consisted of individuals with less than 5 years of experience (57.1%).

The largest portion of the sample was comprised of respondents from Selangor (N = 95, 42.0%). This can be better explained based on the Healthcare Staff by State and Staff Type Data Government Data, Selangor has the highest number of doctors and nurses compared to the other states [47].

Descriptive statistics indicated that participants exhibited moderate levels of burnout ($M= 32.75$, $SD = 7.47$), STS ($M = 28.99$, $SD = 6.79$), and CS ($M = 34.56$, $SD = 6.37$). The composite CF score ($M = 61.75$, $SD = 11.18$) corroborates this interpretation, indicating a moderate level of CF. Resilience was also found to be at a moderate level ($M = 108.07$, $SD =12.40$). PHQ-9 scores indicated moderate depressive symptoms ($M = 10.46$, $SD = 6.89$), whereas GAD-7 scores indicated mild anxiety levels ($M = 8.36$, $SD = 4.39$).

The combined PHQ-9 and GAD-7 (PHQ-ADS) scores revealed moderate psychological distress, with a mean total score of $M = 18.82$ ($SD = 10.96$). This finding aligns with a study by [48] that found significant anxiety and depression symptoms, with long-term care workers experiencing moderate levels of CF and moderate levels of CS.

H1: Compassion fatigue (CF) will significantly and positively predict psychological distress among healthcare workers.

The current study revealed that CF significantly and positively predicted psychological distress among healthcare workers in Malaysia. This aligns with [18], who mentioned that based on CFRM theory, CF acts as a chronic caregiving stressor, which in the absence of sufficient coping resources, leads to psychological distress. This result corresponds with [49], who indicated that CF not only influenced HCWs' motivation and work efficiency but also resulted in negative emotional outbursts and psychological issues. Furthermore, Pérez-García et al. indicated that if left unaddressed, CF will compromise well-being and health, resulting in mental health disorders (depression and anxiety), which in turn cause job impairment.

However, it is important to note that the external workplace stressors may have contributed to psychological distress [50]. In this study, we did not account for the external workplace stressor, which will be addressed in the limitations.

H2: Compassion satisfaction (CS) will moderate the relationship between compassion fatigue (CF) and psychological distress among healthcare workers.

In the current study, it was found that CS did not significantly moderate the relationship between CF and psychological distress. While a lot of past studies have mentioned that CS has an inverse relationship with burnout and CF [23,24,25], some studies caution that CS alone is not sufficient to mitigate CF among HCWs [26, 28, 29].

This current finding was in line with [29] recent research that CS did not have a significant moderation effect on the link between CF and burnout. Hence, it can be said that CS does not directly protect HCWs from STS or CF-related stress; it only helps with burnout

[28]. echoed this, showing that CS did not buffer the crisis helpline workers from the negative effects on their mental health [26].

The non-significant moderating effect of this interaction also may lie in the interplay between CS and structural workplace conditions [51]. highlighted that while CS is significantly linked with the workplace and income, it also comes from the workplace policies, the schedule flexibility, nurturing leaders, a positive environment, collaborative efforts and their culture.

Reflecting on the current Malaysian healthcare system, the number of healthcare professionals has rapidly outpaced population growth, and in 2021, Malaysia had 23.8 doctors per 10,000 population, with a ratio of 1 doctor to 420 people [52]. This indicates the substantial workload that these HCWs are experiencing due to an understaffing ratio to high patient volume. Moreover, [53] conducted a study among working mothers in Malaysian public hospitals and reported that the significant challenges faced were particularly in managing workload, accessing adequate social support, maintaining work motivation, and coping with emotional stress, all of which may hinder the sustainability of CS.

Taking everything into account, these findings suggest that while CS may have its buffering role, CS alone may not be sufficient to buffer HCWs in the relationship between CF and psychological distress due to external circumstances.

H3: Resilience will moderate the relationship between compassion fatigue (CF) and psychological distress among healthcare workers.

This study found that resilience significantly moderated the relationship between CF and psychological distress. This is consistent with the CFRM theory [18]; those who are continuously exposed to the suffering of others can still thrive by cultivating resilience. This is also in line with past studies that mentioned HCWs resilience is positively linked to better mental and psychological health [32] [31]. Adequate support helps nurses handle emotional issues, improve mental health and quality of life, lower anxiety and depression, cope with adversity, and reduce burnout risk through resilience [35]; [34] [36] [31].

It is important to note that while past studies found that resilience was not a stand-alone moderator, whereby they combined resilience with another protective factor (e.g., social support) [31,34,35,36,] this study found that resilience alone is significant enough to buffer the psychological distress due to CF which is aligned with Alharbi et. al., indicating that resilience predicts CF and serves a protective role for HCWs' mental health against the adverse effects of crises, including stress, anxiety, posttraumatic stress disorder (PTSD), depression, burnout, and sleep disturbances [54,55].

This could possibly be better explained by the fact that this study used MeRS, a questionnaire that was specifically developed and validated among Malaysian HCWs. Hence, it might better capture context-specific resilience traits that are relevant for them, making resilience more prominent. There may also be other unmeasured moderators or mediators that affected the relationship but were not accounted for [56], which will be addressed in the limitations.

H4: Compassion satisfaction (CS) and resilience will moderate the relationship between compassion fatigue (CF) and psychological distress among healthcare workers.

This study found that CS and resilience did not significantly moderate the relationship between CF and psychological distress among HCWs. Reflecting on CFRM theory by [18], resilience and CS represent distinct but complementary protective resources. Following the model, it can be seen that CS is grouped with social support, which means CS is an internal protective factor, but social support is an external protective factor. However, in this study, we grouped CS with resilience, which were both internal protective factors, and this will be addressed in the limitations. [57] also noted that resilience may be significant, particularly when external supports are limited or not accounted for.

A recent study by Al [13] also found non-significant interaction effects for CS and resilience on turnover intention. While the turnover intention might not be exactly the same as psychological distress, the finding reflects a consistent pattern in which it showed that both moderator interactions were not significant, similar to our findings.

H5: There will be a significant difference in the level of compassion fatigue (CF) between professions.

There was a significant difference in CF level between professions, with nurses reporting the highest, followed by medical officers and houseman officers subsequently. This pattern is consistent with CFRM theory that proposed exposure to repeated empathic engagement and trauma-related work increases the likelihood of developing CF [18]. It was also observed that CF is higher among those with extended working experience, which may be due to the complex circumstances and higher care demands of patients [58,59]. Singer et al. also identified that CF was significantly and positively correlated with the weekly working hours. Hence, considering the fact that houseman officers are still in their one-year housemanship period, they may be relatively protected from such encounters due to the limited clinical experience and supervision they received [58], potentially accounting for their lower CF levels [60-75].

5.1 Implications of Study

Theoretically, this study extends the understanding of CF and psychological distress among HCWs in Malaysia while highlighting resilience as a key internal moderator, especially when external support is limited. It also showed the differential role between resilience and CS as well as highlighting the relevance of using context-specific tools (e.g., MeRS) for Malaysian HCWs.

Practically, these insights equip policymakers and the Ministry of Health (MOH) with empirical data to guide workplace mental health planning. This finding supports the development of resilience-based intervention.

The results inform clinical psychologists in designing more tailored interventions, such as Brief Cognitive Behavioural Therapy (Brief-CBT) or Acceptance and Commitment Therapy

(ACT) that fit within the demanding schedules of HCWs while integrating CS and resilience.

Limitations of Study and Future Directions

External Stressors.

External stressors such as life demands were not accounted for, which could have influenced the level of distress independently. In future studies, it is best to account for the external stressors as covariates or control variables to better isolate the effects.

External Protective Factors.

External protective factors were not accounted for, which limits the ability to see how these internal resources interact with external supports. Future research should include measures of external protective factors to provide a more nuanced understanding of how they interact in the relationship.

Control of Variables

This study acknowledged that no control for demographic or occupational variables was included in our analyses, which may have influenced the level and relationships tested. Future studies should consider controlling for these variables to better isolate the potential confounding variables.

Risk of Sampling Bias

There is a risk of sampling bias, as those who were already experiencing high CF have been too overwhelmed to participate. Future studies should consider employing shorter questionnaires to reduce questionnaire fatigue.

Sample Size

This study was also limited by its relatively small sample size, which limits the generalizability of these findings. Future studies should aim to recruit larger and more diverse samples to enhance external validity.

Research Design

This study employed a purely quantitative approach which may not fully capture the complexity of lived experience. In response, we suggest adopting a mixed-method approach to gain a richer understanding of what truly causes the distress and what truly protects them.

Conclusion

This study used a cross-sectional study design and a moderation model. 226 Malaysian HCWs were recruited from online platforms through a convenience and snowball sampling method. The analyses showed that CF predicts psychological distress, resilience moderates the relationship, and there was a significant difference in level of CF between professions. However, CS did not moderate the relationship, even after controlling for resilience.

From a theoretical point of view, this study contributes new evidence in supporting the CFRM theory and extends it within the Malaysian context. Clinically, this study highlighted the need to design resilience-focused interventions for Malaysian HCWs.

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References

1. Moya-Salazar J, Goicochea-Palomino EA, Porras-Guillermo J, Cañari B, Jaime-Quispe A, et al. (2023) Assessing empathy in healthcare services: a systematic review of South American healthcare workers' and patients' perceptions. Frontiers in Psychiatry https://doi.org/10.3389/fpsyt.2023.1249620.
2. Atahuaman-Arroyo F, Ramírez-Espinoza DM, Segama-Fabián E, Dámaso-Mata B, Panduro-Correa V, et al. (2020) Factors associated with the level of empathy towards the patient in medical students, Peru, 2018. https://www.medigraphic.com/cgi-bin/new/resumenI.cgi?IDARTICULO=97806.
3. Stamm BH (2010) The concise ProQOL manual. ProQOL. Org. Pocatello, ID. Sweileh, W. M. (2020). Research trends and scientific analysis of publications on burnout and compassion fatigue among healthcare providers. Journal of Occupational Medicine and Toxicology https://doi.org/10.1186/s12995-020-00274-z.
4. Figley CR (1995) Compassion Fatigue: Coping with Secondary Traumatic Stress Disorder in Those Who Treat the Traumatized.
5. Lange M, Joo S, Couette P, De Jaegher S, Joly F, et al. (2020) Impact on mental health of the COVID-19 outbreak among community pharmacists during the sanitary lockdown period. Annales Pharmaceutiques Françaises 78: 459-463.
6. Martínez-López JÁ, Lázaro-Pérez C, Gómez-Galán J, Del MarFernández-Martínez M (2020) Psychological impact of COVID-19 emergency on health professionals: Burnout incidence at the most critical period in Spain. Journal of Clinical Medicine, 9: 3029.
7. Zhizhong W, Koenig HG, Yan T, Jing W, Mu S, et al. (2020) Psychometric properties of the moral injury symptom scale among Chinese health professionals during the COVID-19 pandemic. BMC Psychiatry https://doi.org/10.1186/s12888-020-02954-w.
8. Soto-Rubio A, Del Carmen Giménez-Espert M, Prado-Gascó V (2020) Effect of Emotional Intelligence and Psychosocial Risks on Burnout, Job Satisfaction, and Nurses' Health during the COVID-19 Pandemic. International Journal of Environmental Research and Public Health, 17: 7998.
9. Kannampallil TG, Goss CW, Evanoff BA, Strickland JR, McAlister RP, et al (2020). Exposure to COVID-19 patients increases physician trainee stress and burnout. PLoS ONE 15: e0237301.
10. Chen J, Liu X, Wang D, Jin Y, He M, et al. (2020) Risk factors for depression and anxiety in healthcare workers deployed during the COVID-19 outbreak in China. Social Psychiatry and Psychiatric Epidemiology, 56: 47-55.
11. Son C, Hegde S, Smith A, Wang X, Sasangohar F (2020) Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. Journal of Medical Internet Research 22: e21279.
12. Hui L, Garnett A, Oleynikov C, Boamah SA (2023) Compassion fatigue in healthcare providers during the COVID-19 pandemic: a scoping review protocol. BMJ Open 13: e069843.
13. Yahyaei AA, Kindi ZA, Sabei SA, Hasni NA, Jabri WA, et al. (2025) Moderating role of resilience on professional quality of life, stress and turnover intention among oncology nurses. BMC Nursing https://doi.org/10.1186/s12912-025-03463-5.
14. Patole S, Pawale D, Rath C (2024) Interventions for Compassion Fatigue in Healthcare Providers—A Systematic Review of Randomised Controlled Trials. Healthcare 12: 171.
15. Kabunga A, Anyayo LG, Okalo P, Apili B, Nalwoga V, et al. (2021) Prevalence and contextual factors associated with

compassion fatigue among nurses in northern Uganda. PLoS ONE 16: e0257833.

16. Ondrejková N, Halamová J (2022) Prevalence of compassion fatigue among helping professions and relationship to compassion for others, self-compassion and self-criticism. Health & Social Care in the Community, 30: 1680-1694.
17. Noor AM, Suryana D, Kamarudin EME, Naidu NBM, Kamsani SR, et al. (2025) Compassion fatigue in helping professions: a scoping literature review. BMC Psychology https://doi.org/10.1186/s40359-024-01869-5.
18. Ludick M, Figley CR (2016) Toward a mechanism for secondary trauma induction and reduction: Reimagining a theory of secondary traumatic stress. Traumatology an International Journal, 23: 112-123.
19. Cetrano G, Tedeschi F, Rabbi L, Gosetti G, Lora A, et al. (2017) How are compassion fatigue, burnout, and compassion satisfaction affected by quality of working life? Findings from a survey of mental health staff in Italy. BMC Health Services Research https://doi.org/10.1186/s12913-017-2726-x.
20. Yu H, Qiao A, Gui L (2021) Predictors of compassion fatigue, burnout, and compassion satisfaction among emergency nurses: A cross-sectional survey. International Emergency Nursing 55: 100961.
21. Jo M, Na H, Jung YE (2019) Mediation Effects of Compassion Satisfaction and Compassion Fatigue in the Relationships Between Resilience and Anxiety or Depression Among Hospice Volunteers. Journal of Hospice & Palliative Nursing. https://nursing.ceconnection.com/ovidfiles/00129191-202006000-00012.pdf.
22. Chiew LC, Chen YY, Bujang MA, Chew KS, Rahman MM, et al. (2025) Compassion Fatigue, Burnout, and Psychological Flexibility among Healthcare Workers: Emotional Strain in Sarawak Tertiary Hospitals. Environment-Behaviour Proceedings Journal 10: 203-210.
23. Zhang Y, Zhang C, Han X, Li W, Wang Y (2018) Determinants of compassion satisfaction, compassion fatigue and burn out in nursing. Medicine 97: e11086.
24. Jakimowicz S, Perry L, Lewis J (2017) Compassion satisfaction and fatigue: A cross-sectional survey of Australian intensive care nurses. Australian Critical Care 31: 396-405.
25. Ata EE, Yilmaz EB, Bayrak NG (2020) Resilience, occupational satisfaction, burnout and compassion fatigue in Turkish intensive care nurses. Kontakt 22: 152-158.
26. Aulkemeyer M (2020) Compassion Satisfaction in Crisis Line Volunteers: Determinants of Compassion Satisfaction and its Protective Impact on the Experience of Secondary Traumatic Stress and General Well-Being.
27. Craigie M, Osseiran-Moisson R, Hemsworth D, Aoun S, Francis K, et al. (2015) The influence of trait-negative affect and compassion satisfaction on compassion fatigue in Australian nurses. Psychological Trauma Theory Research Practice and Policy 8: 88-97.
28. Kendall-Tackett K, Beck CT (2022) Secondary Traumatic Stress and Moral Injury in Maternity Care Providers: A Narrative and Exploratory Review. Frontiers in Global Women S Health 3.
29. Radcliff JN (2025) The Mediating and Moderating Effects of Job Satisfaction, Burnout, and Compassion Fatigue, Through the Lens of the CFRM. Scholars Crossing.
30. Yom Y, Kim H (2012) Effects of Compassion Satisfaction and Social Support in the Relationship between Compassion Fatigue and Burnout in Hospital Nurses. Journal of Korean Academy of Nursing 42: 870.
31. Zanatta F, Maffoni M, Giardini A (2019) Resilience in palliative healthcare professionals a systematic review. Supportive Care in Cancer 28: 971-978.
32. Labrague LJ (2021) Psychological resilience, coping behaviours and social support among health care workers during the COVID-19 pandemic: A systematic review of quantitative studies. Journal of Nursing Management 29: 1893-1905.
33. Hou T, Zhang T, Cai W, Song X, Chen A, et al. (2020) Social support and mental health among health care workers during Coronavirus Disease 2019 outbreak: A moderated mediation model. PLoS ONE 15: e0233831.
34. Kılınç T, Çelik AS (2020) Relationship between the social support and psychological resilience levels perceived by nurses during the COVID-19 pandemic: A study from Turkey. Perspectives in Psychiatric Care 57: 1000-1008.
35. Abdulmohdi N (2023) The relationships between nurses' resilience, burnout, perceived organisational support and social support during the second wave of the COVID-19 pandemic: A quantitative cross-sectional survey. Nursing Open 11.
36. Nitschke JP, Forbes Pa G, Ali N, Cutler J, Apps Ma J, et al. (2020) Resilience during uncertainty? Greater social connectedness during COVID-19 lockdown is associated with reduced distress and fatigue. British Journal of Health Psychology 26: 553-569.
37. Alharbi J, Jackson D, Usher K (2019) Personal characteristics, coping strategies, and resilience impact on compassion fatigue in critical care nurses: A cross-sectional study. Nursing and Health Sciences 22: 20-27.
38. Wijdenes KL, Badger TA, Sheppard KG (2018) Assessing Compassion Fatigue Risk Among Nurses in a Large Urban Trauma Center. JONA the Journal of Nursing Administration 49: 19-23.
39. Xie W, Wang J, Okoli CTC, He H, Feng F, et al. (2020) Prevalence and factors of compassion fatigue among Chinese psychiatric nurses. Medicine 99: e21083.
40. Figley CR (2002) Compassion fatigue: Psychotherapists' chronic lack of self care. Journal of Clinical Psychology 58: 1433-1441.
41. Koh MYH, Chong PH, Neo PSH, Ong YJ, Yong WC, et al. (2015) Burnout, psychological morbidity and use of coping mechanisms among palliative care practitioners: A multi-centre cross-sectional study. Palliative Medicine 29: 633-642.
42. APA (2018) APA Dictionary of Psychology: Psychological Distress. https://dictionary.apa.org/psychological-distress
43. Kroenke K, Wu J, Yu Z, Bair MJ, Kean J, et al. (2016) Patient Health Questionnaire Anxiety and Depression Scale: Initial Validation in Three Clinical Trials. Psychosomatic Medicine 78: 716-727.
44. Hojat M, Mangione S, Nasca TJ, Cohen MJM, Gonnella JS, et al. (2001) The Jefferson Scale of Physician Empathy: Development and Preliminary Psychometric Data. Educational and Psychological Measurement 61: 349-365.
45. Grace Martin K (2023) The Distribution of Independent Variables in Regression Models. The Analysis Factor. https://www.theanalysisfactor.com/the-distribution-of-independent-variables-in-regressio n-models/
46. Kwan JN, Loh HC, Lee HT, Looi I (2021) Gender Distribution and Differences among Healthcare Workers. ResearchGate https://www.researchgate.net/publication/355770435_Gender_Distribution_and_Differences_among_Healthcare_Workers.
47. Government of Malaysia (2022) Healthcare staff by state and staff type | data.gov.my. data.gov.my https://data.gov.my/data-catalogue/healthcare_staff?state=selangor&type=nurse&visual=t able.

48. Vracevic M, Pavlovic V, Todorovic N, Milic NM, Matejic B, et al. (2025) Compassion fatigue and satisfaction among frontline staff in long term care facilities: psychometric properties of the Serbian version of the professional quality of life scale. Frontiers in Psychiatry.
49. Aoxiao W, Binquan W (2020) Status quo and the influencing factors of empathy fatigue of clinical nurses. EBSCOhost https://doi.org/10.12102/j.issn.1009-6493.2020.24.010.
50. Rink LC, Oyesanya TO, Adair KC, Humphreys JC, Silva SG, et al. (2023) Stressors Among Healthcare Workers: A Summative Content Analysis. Global Qualitative Nursing Research 10.
51. Amarneh BH, Al-Dwieb HM (2022) Compassion fatigue, compassion satisfaction, and resilience among intensive care unit nurses. International Journal of Health Sciences 6: 1123-1134.
52. Ministry of Health (2021) Human Resources for Health (HRH) Country Profiles 2019–2021: Malaysia. Planning Division, Ministry of Health Malaysia. Level 6, Block E6, Parcel E Federal Government Administrative Centre 62590, Federal Territory of Putrajaya https://www.moh.gov.my/index.php/pages/view/1919?mid=1563.
53. Azmi ENA, Ma'rof, AA, Hamsan HH (2024) The Relationship between Workload, Social Support, Work Motivation, and Emotional Stress among Working Mothers in Malaysian Public Hospitals. International Journal of Academic Research in Business and Social Sciences 14.
54. Labrague LJ, Santos JaA (2020) Fear of COVID-19, psychological distress, work satisfaction and turnover intention among frontline nurses. Journal of Nursing Management 29: 395-403.
55. Yörük S, Güler D (2020) The relationship between psychological resilience, burnout, stress, and sociodemographic factors with depression in nurses and midwives during the COVID-19 pandemic: A cross-sectional study in Turkey. Perspectives in Psychiatric Care 57: 390-398.
56. Webb CA, Hirshberg MJ, Gonzalez O, Davidson RJ, Goldberg SB (2023) Revealing subgroup-specific mechanisms of change via moderated mediation: A meditation intervention example. Journal of Consulting and Clinical Psychology 92: 44-53.
57. Caldiroli CL, Sarandacchi S, Tomasuolo M, Diso D, Castiglioni M, et al. (2025) Resilience as a mediator of quality of life in cancer patients in healthcare services. Scientific Reports 15. https://doi.org/10.1038/s41598-025-93008-2. Caro MM, San-Martín M, Delgado-Bolton R, Vivanco L (2017) Empatía, soledad, desgaste y satisfacción personal en Enfermeras de cuidados paliativos y atención domiciliaria de Chile. Enfermería Clínica 27: 379-386.
58. Dong Y, Huang Y, Li D, Li X, Rao H (2025) A qualitative study on compassion fatigue experience and influencing factors of geriatric nurses. Pakistan Journal of Medical Sciences 41: 1008-1012.
59. Yu H, Jiang A, Shen J (2016) Prevalence and predictors of compassion fatigue, burnout and compassion satisfaction among oncology nurses: A cross-sectional survey. International Journal of Nursing Studies 57: 28-38.
60. Barber CE (2018) Compassion –Fatigue and Satisfaction: The Stress Buffering Effects of Mindfulness and Self-Compassion for Mental Health Professionals https://mospace.umsystem.edu/xmlui/handle/10355/64168.
61. Davies LE, Brooks M, Braithwaite EC (2022) Compassion fatigue, compassion satisfaction, and burnout, and their associations with anxiety and depression in UK police officers: A mixed method analysis. The Police Journal Theory Practice and Principles, 96: 509-529.
62. Dyrbye LN, Shanafelt TD, Sinsky CA, Cipriano PF, Bhatt J, et al. (2017) Burnout among health care professionals: A call to explore and address this underrecognized threat to Safe, High-Quality care. NAM Perspectives https://doi.org/10.31478/201707b.
63. Faul F, Erdfelder E, Buchner A, Lang A (2009) Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. Behavior Research Methods 41:1149-1160.
64. Graves J, Joyce C, Hegazi I (2022) From Empathy to Compassion Fatigue: A Narrative Review of Implications in Healthcare. IntechOpen eBooks https://doi.org/10.5772/intechopen.107399.
65. Guidi C, Traversa C (2021) Empathy in patient care: from 'Clinical Empathy' to 'Empathic Concern.' Medicine Health Care and Philosophy 24: 573-585.
66. Hunt PA, Denieffe S, Gooney M (2017) Burnout and its relationship to empathy in nursing: a review of the literature. Journal of Research in Nursing 22:7-22.
67. Kabunga A, Kigongo E, Tumwesigye R, Udho S, Musinguzi M, et al. (2024) A systematic review and meta-analysis of compassion fatigue among healthcare professionals before and during COVID-19 in Sub-Saharan Africa. PLOS Global Public Health 4: e0003388.
68. Mayo GV, Quijano EG, Ponce DA, Ticse R (2019) Utilización de la Escala de Empatía Médica de Jefferson en Residentes que realizan su especialización en un hospital peruano. Revista De Neuro-Psiquiatría, 82: 131-140.
69. Moss M, Good VS, Gozal D, Kleinpell R, Sessler CN (2016) A Critical Care Societies Collaborative Statement: Burnout Syndrome in Critical Care Health-care Professionals. A Call for Action. American Journal of Respiratory and Critical Care Medicine, 194:106-113.
70. Perez-Bret E, Altisent R, Rocafort J (2016) Definition of compassion in healthcare: a systematic literature review. International Journal of Palliative Nursing, 22: 599-606.
71. Rayani A, Hannan J, Alreshidi S, Aboshaiqah A, Alodhailah A (2024) Compassion Satisfaction, Burnout, and Secondary Traumatic Stress among Saudi Nurses at Medical City: A Cross-Sectional Study. Healthcare 12: 847.
72. Richardson C, Percy M, Hughes J (2015) Nursing therapeutics: Teaching student nurses care, compassion and empathy. Nurse Education Today, 35: 1-5.
73. Salmond E, Salmond S, Ames M, Kamienski M, Holly C (2019) Experiences of compassion fatigue in direct care nurses: a qualitative systematic review. The JBI Database of Systematic Reviews and Implementation Reports 17: 682-753.
74. Sorenson C, Bolick B, Wright K, Hamilton R (2016) Understanding Compassion Fatigue in Healthcare Providers: A Review of Current Literature. Journal of Nursing Scholarship 48: 456-465.
75. Zhu Y, Jha SC, Shutta KH, Huang T, Balasubramanian R, et al. (2022) Psychological distress and metabolomic markers: A systematic review of posttraumatic stress disorder, anxiety, and subclinical distress. Neuroscience & Biobehavioral Reviews 143: 104954.