

REVIEW NARRATIVE

Predictors of compassion satisfaction and compassion fatigue in health care workers providing health and rehabilitation services in rural and remote locations: A scoping review

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Abstract

Introduction: A better understanding of the predictors of compassion satisfaction and compassion fatigue in health care workers in rural and remote communities is needed to inform preventative interventions for this sector of the health workforce.

Objective: To identify predictors of compassion satisfaction and compassion fatigue in health care workers providing health and rehabilitation services in rural and remote locations.

Design: A scoping review informed by Arksey and O'Malley's five-stage framework and the scoping review protocol of the PRISMA-ScR statement.

Findings: The search yielded 946 articles, and 34 full texts were screened for eligibility, leaving 12 studies meeting the inclusion criteria. No studies on workers providing rehabilitation services were identified. Three studies assessed possible predictors of compassion satisfaction and compassion fatigue in health care workers, and all studies evaluated burnout. The most studied predictor variables were age, gender, profession and workload.

Discussion: This study identified potential risk and protective factors for health care workers that are likely relevant to those providing rehabilitation services in rural locations. Little is known about possible predictors of compassion satisfaction and compassion fatigue in professionals working in rural and remote areas outside of medicine and nursing or health care workers in rural community-based settings.

Conclusion: Research examining predictors of compassion satisfaction and compassion fatigue in rehabilitation health care workers working in rural and remote locations is scant. Research that identifies risk and protective factors in this rapidly growing sector of the health care workforce is needed to inform the development of interventions that promote professional quality of life.

KEYWORDS

burnout, ProQOL, rehabilitation, rurality, secondary traumatic stress

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1 | INTRODUCTION

In the past decade, there has been an increasing need for rehabilitation health care services across Australia, mainly due to a rise in workers' compensation claims, employer early intervention programs, life insurance schemes and, more recently, the implementation of the National Disability Insurance Scheme (NDIS). The NDIS is an initiative implemented by the Australian Government to assist with providing disability services to individuals with a disability and their families, including those residing in rural and remote Australian locations.¹

Rehabilitation health care services primarily concentrate on injury/illness and disability management and are provided by health and allied health providers.² Rehabilitation health care extends beyond preventative and curative health care. It assists individuals impacted by disability, illness, injury or ageing, to optimise their functioning and reduce negative impacts of their condition ensuring they can remain independent and engaged in work, education and avocational activities.³ Rehabilitation health care workers are often exposed to patients with complex trauma histories, life-threatening conditions and chronic illness. The nature of rehabilitation health care requires providers to be empathetically available to the impacted individual and their caregivers.⁴ Health care workers are expected to be compassionate; however, those with a high proportion of traumatic cases or are overly responsive with compassion reactions are at risk of developing compassion fatigue.⁵ Health care workers are often impacted by compassion fatigue,^{6,7} but little appears in the literature about rehabilitation health care workers' experiences with compassion fatigue. As with all health care workers, health workers providing rehabilitation services must be adequately supported to minimise the risk of compassion fatigue.

Stamm's professional quality-of-life model provides a conceptual basis for examining compassion satisfaction and compassion fatigue.^{7,8} The model proposes that compassion satisfaction results from pleasure from undertaking a health care role. In contrast, compassion fatigue is the negative result of health care provisioning to those who have experienced traumatic events and suffering, with compassion fatigue comprising burnout and secondary traumatic stress.⁹ The measure developed from the professional quality-of-life (ProQOL) model is the most commonly used measure of negative and positive effects experienced by health care workers in roles that exposed them to suffering and trauma.⁹ Symptoms from these conditions are likely to result in increased time off work (medical absenteeism), high staff attrition rates, increased likelihood of psychological injury workers' compensation

What is already known on this subject:

- Health care workers are often impacted by compassion fatigue resulting from emotional exhaustion and exposure to high rates of trauma cases
- In rural and remote locations, health care workers face several contextual stress not experienced by their urban colleagues that may increase their vulnerability to compassion fatigue
- Most studies examining compassion fatigue and compassion satisfaction in rural and remote locations have focused on medical personnel, typically physicians and nurses, working in clinical settings

What this study adds:

- There is little research on compassion satisfaction and compassion fatigue experienced by the rehabilitation sector of the rural and remote health workforce
- Several personal and work-related variables are identified as influencing the development of compassion fatigue and compassion satisfaction, but not all findings are consistent between studies
- Findings organised using the professional quality-of-life model provide a visual representation of potential predictor variables to inform future research

claims, suboptimal patient care and increased errors by health care workers.^{7,10} Although compassion fatigue, burnout and secondary traumatic stress are important issues for all health care workers, they may be especially so for health care workers in rural and remote areas where services are not resourced to the extent of those in metropolitan areas.¹¹

Based on the Australian Bureau of Statistics (ABS) geographical classification system, almost one-third of Australians live in rural and remote locations.¹² Health care workers in rural and remote locations face stress not experienced by their urban colleagues. These stress include excessive travel, poor clinical support services, lack of accessibility to locally based health care workers (eg diagnostic and therapeutic services), and a disproportionate number of older residents and residents in receipt of social welfare facing psychosocial issues.^{8,13} The lack of client referral services results in a barrier to treatment planning and recovery, which is a significant stress.¹⁴

Although there have been developments in the linkage of metropolitan services to rurally based health services in the delivery of telehealth and e-consultations, these services are not accessible to all and do not provide physical services. Poor Internet and phone coverage, lack of specialists providing e-consultations, and lack of services to assist with treatment and diagnostics all impact the ability of health care workers to undertake their duties. Further, rural and remote health care workers are generally required to undertake a broader scope of responsibilities than their urban counterparts, including administrative and management tasks and additional patient services. They do not have the organisational resources or referral services urbanised locations have available.^{8,15} Several psychosocial factors, such as living conditions and personal supports, may increase workplace stress and influence rehabilitation health care workers' decision to remain in or relocate to rural or remote locations.¹⁶ Arguably, the most significant work stress faced by rural health care workers includes lack of organisational support, inadequate remuneration, critical decision-making without the support of onsite colleagues, and dealing with crises outside their scope of ability.¹⁷

The existing literature on compassion satisfaction and compassion fatigue provides some insight into the experiences of health care workers from various professional and occupational groups and a variety of work settings.¹⁸ However, most studies focus on the experiences of nurses and physicians working in acute care hospitals, clinics and outpatient treatment settings, not on health care in rehabilitation settings.¹⁸ Further, few reviews have focused solely on health care workers in rural and remote locations, and many studies do not identify rurality in their findings.¹⁹

Accordingly, the purpose of our scoping review is to identify predictors of compassion satisfaction and compassion fatigue in health care workers providing health and rehabilitation services in rural and remote locations reported in the existing literature. The primary intention of the review is to identify variables assessed as predictors in existing studies rather than to critique their concepts or methods. Information from Western countries with similar socio-economic development levels will be considered to increase the relevance of findings to the Australian setting. Although the ABS geographical classification for rural and remote locations is practical, the international scope of this review precludes its application.

The findings of this review will form a basis from which to advance studies on the experiences of compassion satisfaction and compassion fatigue in health care workers providing rehabilitation services in rural and remote locations. This information is needed to inform workplace-based interventions to help minimise the impact of

compassion fatigue and increase the professional quality of life of rural health care workers providing rehabilitation services in Australia.

2 | METHODS

This scoping review was informed by the five-stage framework developed by Arksey and O'Malley²⁰ and followed the protocol in the scoping review extension of the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA-ScR) statement.²¹ The review was not registered. The following research question guided the review: What are the predictors of compassion satisfaction and compassion fatigue in health care workers providing health and rehabilitation services in rural and remote locations?

2.1 | Search strategy

We used a search strategy with a broad reach across published literature on health to increase our ability to identify articles reporting on all forms of health care provided by various health professions in rural and remote settings. Studies were identified using a systematic search of databases covering different research areas, including occupational health, medicine, allied health, psychology, rehabilitation and social sciences: MEDLINE (OVID), PsycINFO (OVID), PILOTS, AMED and Embase. Stamm's professional quality-of-life model informed the search terms for this review's concepts of interest. The model comprises compassion satisfaction and compassion fatigue and identifies burnout and secondary traumatic stress (also known as vicarious trauma) as components of compassion fatigue.²² The electronic search strategy for MEDLINE was as follows: “([compassion satisfaction OR compassion fatigue OR burnout OR secondary traumatic stress OR vicarious trauma] AND health AND [rural OR remote]).af.” The search was limited to English language sources. A manual search of Google Scholar was undertaken using the search criteria to ensure that no relevant material was missed. We examined reference lists of meta-analyses and reviews identified by the search to ensure we included all individual studies that met the inclusion criteria.

2.2 | Inclusion and exclusion criteria

To be included in the study, the articles needed to (a) be in English, (b) use quantitative research methods, (c) have participants who worked in health care roles in rural or

remote locations, (d) be in Western countries to increase the relevance of findings to the Australian setting, (e) identify risk and protective factors for the main variables of interest—compassion satisfaction, compassion fatigue, burnout, secondary traumatic stress or vicarious trauma, (f) use validated measures to document these outcome variables and (g) be published in peer-reviewed journals. To avoid duplication of data, studies were excluded if they reported meta-analyses or a secondary analysis of data. All quantitative studies published up to November 2019 were considered for inclusion in the review. The search results were exported to Endnote X9. Duplicate citations were removed, titles and abstracts were scanned, and the full text of the articles included in the screening process was reviewed by two researchers independently of each other. Any conflict about an article's inclusion was resolved through discussion.

2.3 | Data extraction and synthesis

The extraction of data from eligible articles was undertaken by two researchers using a form (based on Table 1) that was piloted on several articles to make sure it secured all relevant data. The data from this form would populate the evidence table. Data extracted were author, country, sample, design, measures used to document outcome variables, and statistical analysis used to identify significant predictors of the outcome variables. Where articles reported significant results of tests of relationships between potential predictor variables and any of the outcome variables, they were included in the evidence table. Once protective and risk factors from all articles were identified, they were discussed and organised into meaningful elements. The extracted findings were then visually organised against the ProQOL model⁹ to illustrate the identification of possible predictor variables for compassion satisfaction and compassion fatigue.

3 | RESULTS

The literature search identified 946 articles from which 34 full texts were screened for eligibility and 12 were included in the review (see Figure 1). Of these studies, four were conducted in the USA,^{11,15,23,24} two in Canada,^{25,26} two in Australia,^{12,27} two in Spain^{28,29} and one each in Switzerland³⁰ and Germany.³¹ Studies spanned 18 years with seven (58%) conducted in the past 5 years and four (33%) published since 2017. The literature identified three studies each that assessed possible predictors of compassion satisfaction^{11,12,25} and compassion fatigue,^{11,24,25} with burnout evaluated by all 12 studies. Secondary traumatic

stress was not measured independently of compassion fatigue in studies included in this review. The characteristics of the included studies are summarised in Table 1.

All studies included health care workers employed in rural and remote locations, and eight of the studies specifically assessed rurality as a potential predictor variable. Only one study distinguished between workers from rural or remote areas, but these groups were not analysed separately.¹² As none of the other studies distinguished 'rural' from 'remote,' the terms 'rural' and 'rurality' may refer to both rural and remote settings. Study cohorts were recruited from clinical, hospital and community settings. The studies had a combined sample size of 5073 (range = 1686; 69–1755). Participants comprised physicians (45.28%), nurses (14.96%), general mental health professionals (social workers, counsellors, child welfare workers and marriage and family therapists; 8.43%), outpatient mental health workers (medical and non-medical—unspecified; 4.42%), physician assistants (advanced practice providers; 3.25%), child welfare workers (profession unspecified; 2.84%), school-based mental health professionals (profession unspecified; 2.61%), psychiatrists (2.07%), psychologists (2.03%), emergency services providers (1.12%), inpatient mental health workers (medical and non-medical—unspecified; 0.47%), unspecified health care workers (0.1%) and physical therapists (0.02%).

Studies that reported gender or sex proportions included a total of 2321 (46%) men and 2178 (43%) women. Two studies, accounting for 480 (9%) participants, did not summarise participants' biological or identified sex.^{15,27} Four studies had a reporting deficit, with gender or sex proportions not aligned with reported participant numbers (2%).^{11,24–26} The participant age range was 21–95 [sic] years with a mean age of 45.4 years. Seven studies provided the mean age,^{11,12,23–26,31} one study provided the median age,²⁹ three studies did not provide age ranges or the mean age of participants,^{15,27,29} and one study provided age range, but not mean age.³⁰ All studies weighted equally in the review. The most frequently used measures were the Maslach Burnout Inventory (MBI; $n = 7$) and the ProQOL ($n = 4$).

3.1 | Predictors of compassion satisfaction and compassion fatigue

All studies included in this review used a cross-sectional design so it was not possible to determine whether reported predictors were causal. As revealed by the statistical analyses, the approach of all was to look for correlational associations between measures taken at a point in time, with no analyses attempting to model

TABLE 1 Variables that have significant associations with compassion satisfaction, compassion fatigue and burnout in rural and remote health care workers

Authors	Country	Sample	Design	Measures	Analysis	Main findings related to the research question
Samios 2018 ¹²	Australia	Rural mental health workers n = 69 Registered and probationary psychologists, counsellors and social workers Response rate = 26% Gender: 20% male and 80% female Age: 25–95 years Mean = 48.78 years	Cross-sectional study	The 10-item Burnout subscale of the ProQOL 5-item Mindful Attention Awareness Scale The 10-item Compassion Satisfaction subscale of the ProQOL Sociodemographic questionnaire	Hierarchical multiple regression analysis	Burnout: <ul style="list-style-type: none"> Income—significant negative relationship with burnout Life satisfaction—significant negative relationship with burnout Depression—significant positive relationship with burnout Mindfulness—significant negative relationship with burnout Age, gender, relationship, caseload and work location—no significant relationship with burnout Compassion satisfaction: <ul style="list-style-type: none"> Income—significant positive relationship with compassion satisfaction Mindfulness—significant positive relationship with compassion satisfaction Depression—significant negative relationship with compassion satisfaction Age, gender, relationship, caseload and work location—no significant relationships with compassion satisfaction
Singh et al 2015 ²⁷	Australia	Australian-registered mental health nurses with a minimum of 1-year mental health nursing experience n = 319 Response rate = 80% Gender response rates were not reported Age range and mean not reported	Cross-sectional study with cluster sampling	MBI Sociodemographic questionnaire	Descriptive and inferential analyses	Burnout: <ul style="list-style-type: none"> Gender—men had a significant relationship with depersonalisation Age—being younger than 30 years had a significant negative relationship with emotional exhaustion Qualifications—higher number of qualifications and higher levels of qualifications—significant positive relationship with depersonalisation Present work location, work duration and living arrangements (alone or with others)—no significant relationship with burnout

TABLE 1 (Continued)

Authors	Country	Sample	Design	Measures	Analysis	Main findings related to the research question
Sawatzky & Enns 2012 ²⁵	Canada	Registered nurses in Canadian emergency departments <i>n</i> = 261 Rural participants, 27% of the sample Response rate = not reported Gender: 11% male and 89% female Age: 21–70 years Mean = 41.1 years	Cross-sectional study	The Perceived Nurse Working Environment (PNWE) Scale The Engagement Composite Questionnaire ProQOL Job satisfaction was measured by a single item (1 = not at all satisfied; 5 = very satisfied) Sociodemographic questionnaire	Bivariate and regression analyses Contingency table analysis Analysis of variance	Burnout: <ul style="list-style-type: none"> • Work engagement—significant association with burnout • Adequate staffing/resources—significant negative relationship with burnout • Marital status—being married has a significant negative relationship with burnout • Collaboration with physicians—significant negative relationship with burnout • Gender, age, education, employment status, shift rotation and years' experience—no significant relationships with burnout Compassion Satisfaction/Fatigue: <ul style="list-style-type: none"> • Work engagement—significant predictor of compassion satisfaction and compassion fatigue • Negative staff engagement—significant predictor of compassion fatigue • Adequate staffing levels and appropriate resourcing—significant predictors of compassion satisfaction • Intention to leave nursing—significant negative relationship with compassion satisfaction • Working only day shifts—significantly higher compassion satisfaction and lower compassion fatigue • Inadequate remuneration—negative significant relationship with compassion satisfaction • Sex, age, education, employment status and years' experience—no significant relationships with burnout
Thommasen et al 2001 ²⁶	Canada	Rurally practising physicians registered with the 1998 physician register of the College of Physicians and Surgeons of British Columbia <i>N</i> = 131 Response rate = 66% Sex: 74% male and 26% female Age: <30–59> years 30–39 years (37%) 40–49 years (29%) 50–59 years (23%) >59 years (8%) Mean = 43.6 years	Cross-sectional study	Beck Depression Inventory MBI Sociodemographic questionnaire	Multiple regression analysis	Burnout: <ul style="list-style-type: none"> • Job dissatisfaction—significantly associated with high emotional exhaustion and poor sense of personal accomplishment • Relocation—desire to relocate was significantly associated with high emotional exhaustion • Mental health—depression significantly associated with high emotional exhaustion and depersonalisation

TABLE 1 (Continued)

Authors	Country	Sample	Design	Measures	Analysis	Main findings related to the research question
Adarkwah et al 2018 ³¹	Germany	General practitioners working in a rural location <i>n</i> = 85 Response rate = 53.8% Gender: 75% male and 25% female Age range = 32–73 years Mean age = 53.5 years (SD 8.93) Median age = 54 years	Cross-sectional study	Maslach Burnout Inventory (MBI)—German version	Canonical correlation analysis	<i>Burnout:</i> <ul style="list-style-type: none"> • Patient care—significant negative association with depersonalisation • personal rewards—significant negative association with depersonalisation • professional relationships—significant negative association with depersonalisation • Age, gender, years in practice, group or single practices, number of hours worked and percentage of client contact—not significantly associated with burnout
Yugero et al 2015 ²⁸	Spain	General practitioners from rural and urban areas of the Lleida district <i>n</i> = 108 Response rate = 61% Sex: 64% female and 36% male Age range and mean of the total sample not reported	Cross-sectional study	Spanish version of the MBI Spanish version of the Jefferson Scale of Physician Empathy (JSPE) Sociodemographic questionnaire	Descriptive analysis	<i>Burnout:</i> <ul style="list-style-type: none"> • Empathy—high empathy was significantly associated with low burnout • Clients—there was no relationship between sick leave prescription (% patients on sick leave, duration of sick leave and repeated sick leave) and burnout • Sex, age and location (urban/rural)—no significant associated with burnout
Yugero et al 2017 ²⁹	Spain	Family physicians and nurses from rural and urban areas of the Lleida District <i>n</i> = 267 Response rate = 53% Rural participants were 58% of the sample Sex: 22% male and 78% female Age range: 31–65 years Median age 48 years	Cross-sectional study	The Spanish version of the 22-item MBI The Spanish version of the JSPE Sociodemographic questionnaire	Descriptive analysis	<i>Burnout:</i> <ul style="list-style-type: none"> • Empathy—empathy had a significant negative relationship with burnout • Sex, age, profession and location (urban/rural)—no relationship with burnout

TABLE 1 (Continued)

Authors	Country	Sample	Design	Measures	Analysis	Main findings related to the research question
Goehring et al 2005 ³⁰	Switzerland	Primary care physicians <i>n</i> = 1755 Rural participants were 30% of the sample Response rate = 59% Sex: 84% male and 16% female Age: <45 years (23.4%) 45–50 years (25.8%) 51–55 years (25.0%) >55 years (25.8%) Mean age not reported	Cross-sectional study	MBI translated into French, German and Italian Sociodemographic questionnaire	Multiple logistic regression	Burnout: • Men—significant risk factor • Age—45–55 years age group, significant risk factor • Location—rural environment, significant risk factor • Profession: medical speciality—significant risk factor • Excessive perceived stress due to factors below—all significant risk factors ■ Global workload ■ Health care system—changes in the health care system, medical care uncertainty ■ Type of work—health insurance workload ■ Patients' expectations ■ Practice factors—economic constraints in the practice, relationships with non-medical staff at the practice ■ Work–life balance—difficulties with work–life balance • Living alone, fear of malpractice, care of terminally ill patients, medical emergencies and telephone consultations—no association with burnout
Benson et al 2016 ¹⁵	USA	Members of the American Academy of Physician Assistants who self-reported as practising in a rural location <i>n</i> = 161 Response rate = 11.3% Male/female proportions were not specified Age range and mean age not reported	Cross-sectional study	MBI	Spearman's correlation analysis	Burnout: • Control over workload—weakly to moderately correlated with all three burnout subscales • Adequacy of administrative support—significantly positively correlated with all three burnout subscales • Satisfaction with and access to supervisors—significant negative relationship to emotional exhaustion • Professional isolation—significant positive relationship with depersonalisation and emotional exhaustion • Geographical isolation—significant negative association with personal accomplishment • Hours worked—significant positive relationship with depersonalisation
Bethea et al 2019 ²³	USA	Rural health care practitioners <i>n</i> = 127 Emergency medical services providers, nurses, physicians, advanced practice providers, physical therapists and other practitioners Response rate = 74.7% Gender: 40% male and 60% female Age range not reported, mean = 42.4 years (SD = 11)	Cross-sectional study	Mini Z burnout survey (accessible through the American Medical Association's website) with additional questions targeting the perception of BO impact and the availability of BO preventative measures Sociodemographic questionnaire	Descriptive analysis	Burnout: • Job satisfaction—significantly lower in the 'burned-out' group • Work-related stress—job stress, control over workload, time available for documentation, chaotic work atmosphere, value alignment with institution/employer leadership, effective patient teamwork and time spent on electronic medical records at home—significantly higher proportions reported by the 'burned-out' group • Age, gender, profession, years of professional experience and availability to education on burnout—no significant differences between 'burned out' and 'not burned out'

(Continues)

TABLE 1 (Continued)

Authors	Country	Sample	Design	Measures	Analysis	Main findings related to the research question
Sprang et al 2007 ¹¹	USA	Licensed or certified behavioural health care workers n = 1121 Psychologists, psychiatrists, social workers, marriage and family therapists, professional counsellors, and drug and alcohol counsellors Rural participants were 26% of the sample Response rate = 19.5% Gender: 30% male and 70% female Age: 23–81 years Mean = 45.22 years	Cross-sectional study	A survey specifically designed for this study with 102 items incorporating sociodemographics, work practices and levels of compassion satisfaction, compassion fatigue and burnout ProQOL	Analysis of variance Multivariate analysis of variance Hierarchical regression analysis	<p><i>Burnout:</i></p> <ul style="list-style-type: none"> Gender—women reported significantly higher than men on burnout scores Age—younger age predicted higher levels of burnout Clinical experience—less clinical experience predicted burnout Workplace—inpatient professionals had significantly higher burnout scores than private practice professionals Rurality—respondents who provided services in the most rural areas of the state had significantly higher burnout scores than those in urban areas Highest degree, licensure, specialist training and % of clients with PTSD—no significant relationships with burnout <p><i>Compassion satisfaction/fatigue:</i></p> <ul style="list-style-type: none"> Gender—women reported significantly higher than men on compassion satisfaction and compassion fatigue scores Age—younger age predicted higher levels of compassion fatigue; older age predicted compassion satisfaction Qualification—MD degree predicted higher levels of compassion fatigue Workplace—inpatient professionals had significantly higher compassion fatigue scores than private practice professionals Clinical experience—less clinical experience predicted compassion fatigue Client factors—a higher percentage of clients with PTSD predicted higher levels of compassion fatigue Training—participants with specialised training in trauma work had higher compassion satisfaction and lower compassion fatigue scores than those without specialised training Location of practice (rurality) did not have a significant relationship with compassion satisfaction or fatigue

TABLE 1 (Continued)

Authors	Country	Sample	Design	Measures	Analysis	Main findings related to the research question
Sprang et al 2011 ²⁴	USA from six states and Toronto, Canada	Behavioural health care workers n = 668 Child welfare (22.9%) Inpatient (3.8%) Psychiatrist (16.8%) Outpatient (35.6%) School based (21.0%) Rural participants = 14% of the sample Response rate = 24% Gender: 33% male and 67% female Age range not reported, mean age = 40.8 years	Cross-sectional study	ProQOL-IV Sociodemographic questionnaire	Bivariate analysis Hierarchical multiple regression analysis	<p><i>Burnout:</i></p> <ul style="list-style-type: none"> Gender—men reported significantly higher than women on burnout scores Age—younger age predicted higher levels of burnout Religion—no religious participation was a predictor of burnout Job type—child welfare worker status was a significant predictor of burnout <p>Location and race were not predictors of burnout</p> <p><i>Compassion Fatigue:</i></p> <ul style="list-style-type: none"> Gender—men reported significantly higher than women on compassion fatigue scores Age—younger age predicted higher levels of compassion fatigue Religion—no religious participation was a significant predictor of compassion fatigue Job type—child welfare worker status was a significant predictor of compassion fatigue Location—rural location was a significant predictor of compassion fatigue Race was not a significant predictor of compassion fatigue

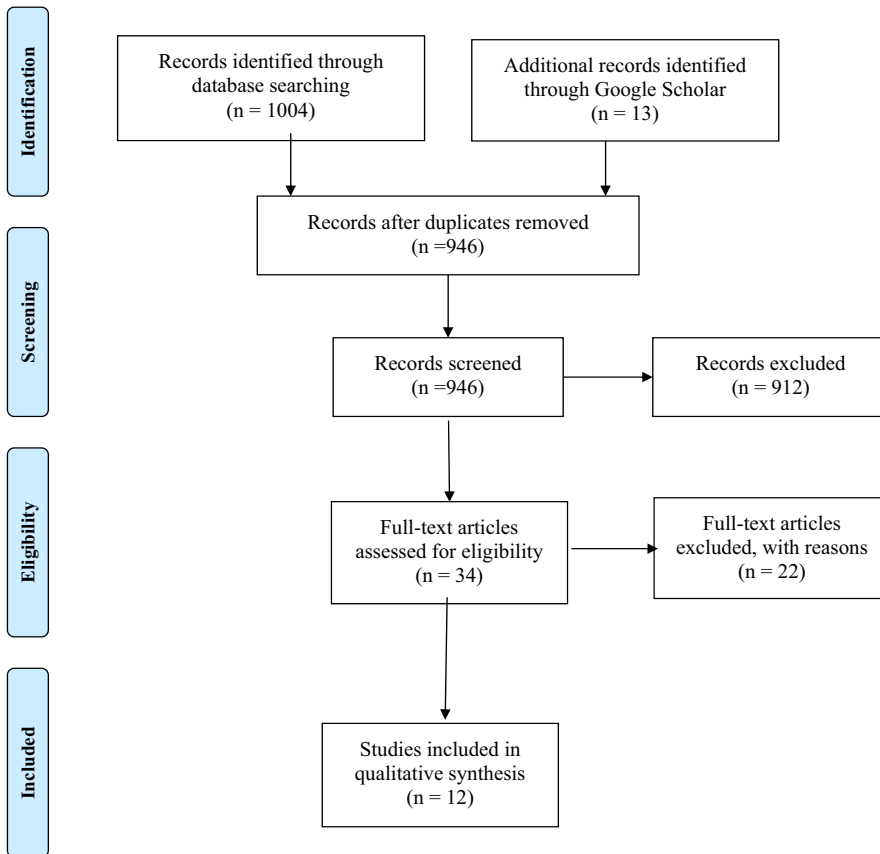


FIGURE 1 PRISMA flowchart of the scoping literature review research process

potential causal paths or statistically assess the effects of controlled interventions. Therefore, in this review, variables that were tested for an association with the outcome variables were identified as possible predictor variables. These variables were organised into two main groups: personal factors, such as age, gender and profession; and work-related factors, including job-related factors and stress. Findings are reported below for each outcome variable included in studies: compassion satisfaction, compassion fatigue and burnout.

3.1.1 | Personal factors

Personal factors were recognised in 11 of the 12 studies as likely risk and protective factors in compassion fatigue, compassion satisfaction and burnout.^{11,12,23–31} These variables were organised into sociodemographics and profession factors.

3.1.2 | Sociodemographics

Ten studies examined relationships between age and the outcome variables, with conflicting results. In regard to burnout, studies from Germany, Canada and Spain found no significant relationships between age and

burnout.^{25,28,29,31} Two studies from Australia and the USA also reported no significant relationships between age and burnout,^{12,23} but other studies from the same countries, and one from Switzerland, reported younger age as positively related to burnout.^{11,24,27,30}

For compassion satisfaction and fatigue, two American studies reported younger age as being significantly associated with compassion fatigue.^{11,24} Another American study reported older age as being associated with compassion satisfaction.¹¹ One Australian study found no significant association between age and compassion satisfaction.¹²

Ten studies included gender as a potential predictor of the outcome variables of which six, conducted in Australia, Canada, the USA, Spain and Germany, identified no relationship.^{12,23,25,28,29,31} As with age, findings varied in studies reporting a significant association with the outcome variables. Studies from Australia, Switzerland and the USA reported that being male was significantly associated with having burnout,^{24,27,30} while another study from the USA identified that being female was significantly associated with developing burnout, compassion satisfaction and compassion fatigue.¹¹

Other sociodemographics identified were income, marital status, mental health, empathy, mindfulness and religious activity. Income was analysed in one Australian study, with income satisfaction significantly positively

correlated with compassion satisfaction and negatively with burnout.¹² Marital status²⁵ and religious activity²⁴ were assessed in studies from Canada and the USA, respectively, with being married reported as significantly decreasing the risk of burnout and active religious practice significantly correlated with a lower risk of burnout. Mental health (depression) was analysed in studies from Australia and Canada, with depression significantly positively correlated with burnout in both studies^{12,26} and negatively associated with compassion satisfaction in the Australian study.¹² Empathy had a significant relationship with burnout in Spanish physicians and nurses^{28,29} and Australian health care workers practising self-care in the form of mindfulness-reported higher scores on compassion satisfaction, with mindfulness acting as a potential protective factor against burnout.¹²

3.1.3 | Profession

Five studies included profession in analyses to identify associations with outcome variables.^{11,23,24,29,30} Of these, two reported no significant associations with any outcome variable.^{23,29} Swiss general practitioners reported higher levels of burnout than other physician specialisations.³⁰ For compassion fatigue, American physicians (including psychiatrists)¹¹ and child welfare workers²⁴ had significantly higher compassion fatigue scores than social workers and psychologists and other behavioural health care workers.

Other profession-related variables included professional qualifications and work experience. In one American study, medical doctors (MDs) reported significantly higher likelihood of developing compassion fatigue than health professionals with other qualifications such as master's degree or Doctor of Philosophy.¹¹ Years of work experience in German general practitioners were not significantly associated with developing burnout,³¹ and no significant difference between years of work experience and levels of burnout was reported by a range of American health care workers.²³ In one Australian study, the number and level of qualifications in mental health nurses were positively associated with burnout.²⁷ In the same study, those who reported doubting their professional role abilities were also reported as having an increased risk of burnout.²⁷

3.1.4 | Work-related factors

Work-related factors were noted in 11 of the 12 studies as likely factors in the development of burnout or compassion fatigue.^{11,12,15,23-25,27-31} Variables were grouped into two factors: job-related factors and work stress.

3.1.5 | Job-related factors

Work hours were reported in five studies^{15,23,25,30,31} and were significantly related to outcome variables in three studies.^{15,23,30} In one study from the USA,¹⁵ workers reported working more than 40 h per week, plus on-call duties and extra administrative tasks, and this load was positively correlated with burnout. Conversely, in the German study,³¹ total working hours per week held no significant relationship with risk of burnout, but it was unclear whether the physicians in this study were required to undertake 'on-call' work. Canadian nurses who only worked day shifts reported significantly higher levels of compassion satisfaction and decreased levels of compassion fatigue than those who worked mixed shifts.²⁵

Elements of the work environment and setting were identified in some studies. The nature of patient care and professional relationships were identified as potential predictors for depersonalisation, lack of empathy and burnout in German health care workers.³¹ Health care workers employed within an American inpatient facility reported higher levels of burnout than those employed in private practice.¹¹ Spanish physicians with a high percentage of patients on long-term sick leave reported high levels of burnout,²⁸ and Swiss physicians doing insurance work and experiencing economic constraints in their practice were significantly more likely to report burnout.³⁰ In relation to compassion fatigue, American health care workers with a high percentage of clients with PTSD were significantly more likely to report compassion fatigue.²⁴

Level of remuneration was reported in an Australian study as having a negative relationship with burnout in rural workers and a positive relationship with compassion satisfaction; this may be attributed to work being more tolerable if remuneration is perceived as adequate, mitigating financial stress and enabling avocational activities.¹² Lower income was a potential predictor of Canadian nurses leaving the profession, with inadequate remuneration inversely related to their reported compassion satisfaction levels.²⁵

Rurality as a specific variable was reported as having significant associations with the outcome variables in three studies. American health care workers servicing rural and remote locations reported significantly higher burnout scores¹¹ and were significantly more likely to report compassion fatigue²⁴ than their urban colleagues. Similarly, working in a rural location was identified as a potential risk factor for the development of burnout in Swiss physicians.³⁰ Rurality was not a potential predictor for burnout in the Spanish studies.^{28,29} One American study reported rurally practising health care workers did not require high levels of complex cases to develop

burnout; they reported that the general stress and burdens of rural practice led to the development of burnout, but not compassion fatigue.¹¹

Work stress

Several work stress was identified in studies from the USA, Switzerland, Canada and Australia. They comprised stress related to workload, inadequate staffing, and issues with work–life balance,^{15,23,25,30} job dissatisfaction²⁶ and professional isolation.¹¹

All four studies examining workload-related issues found significant relationships with burnout.^{15,23,25,30} Lack of control over global workload factors including the adequacy of administration support, management accessibility, consultation over role design, control over patient allocation and adequate time for reporting significantly increased the risk of burnout in American and Swiss health care workers.^{15,23,30} Levels of staffing and resources were reported in one Canadian study as having significant associations with compassion fatigue and compassion satisfaction.²⁵ Failure to maintain a healthy work–life balance placed American and Swiss health care workers at significantly higher risk of developing burnout than those who had good work–life balance.^{23,30}

Canadian physicians experiencing job dissatisfaction²⁶ were more likely to experience burnout, as were American health care workers who had poor value alignment with their organisation and management group.²³ American health care workers who reported feelings of professional and personal isolation were also more likely to experience burnout.¹⁵ Conversely, American health care workers who received specialised trauma training that developed and enhanced their coping skills reported less burnout and compassion fatigue, and increased compassion satisfaction.¹¹

3.2 | Visual organisation of potential predictor variables

The results of this review are represented in [Figure 2](#) to provide a visual organisation of potential predictor variables associated with each of the elements of the ProQOL model.

4 | DISCUSSION

This scoping review sought to identify the predictors of compassion satisfaction and compassion fatigue in health care workers providing health and rehabilitation services in rural and remote locations. Our search identified 12 articles that met the inclusion criteria. Several personal and

work-related variables that had been assessed as potential predictors for one or more of the conditions were identified from these studies.

All studies provided potential predictors of burnout in rural health care workers. However, fewer data were available identifying potential predictors of compassion satisfaction and fatigue for workers in rural settings, possibly because they are more recent concepts in the literature than burnout, which has been researched for over 40 years.³² Some sociodemographic and work-related variables were commonly tested; others less so, often only in one study. Together, they provide a broad view of the potential predictors of compassion satisfaction and compassion fatigue in health care workers in rural and remote locations and offer a basis for future research (see [Figure 2](#)).

The most studied potential predictors in this review were age, gender, work hours, and workload. Except for workload, which was consistently positively associated with burnout (see also the Aronsson et al. review³³), the results were mixed in their implications for sociodemographic and work-related variables as predictors. Associations for age with burnout were either not significant or identified younger age as a potential predictor. Associations for gender were mixed. Most samples comprised unequal proportions of men and women, which may explain the mixed findings. However, our findings are consistent with existing meta-analyses that have also reported inconsistencies in results relating to relationships between sociodemographic and work-related relationships and compassion satisfaction, compassion fatigue and burnout in health care workers.^{18,34}

Findings of lack of consistency in relationships of potential predictor variables with outcome variables across studies and between studies conducted in the same countries suggest there may be other factors mediating the impact of these potential predictors. The relationship between age and burnout, for example, is reported as being moderated by gender, marital status and variability in work experience.³⁵ The relationship between workload and burnout is moderated by workplace commitment, working team quality and recognition from supervisors.³⁶ Other geographical, methodological or health care system-related variables may have significantly influenced relationships with compassion satisfaction and compassion fatigue, but these factors were not examined in this review's studies.

Findings from this review identified very little is known about possible predictors of compassion satisfaction and fatigue for health care workers in rural and remote settings outside the occupations of medicine and nursing. A large proportion of the total sample from studies in this review were nurses and physicians

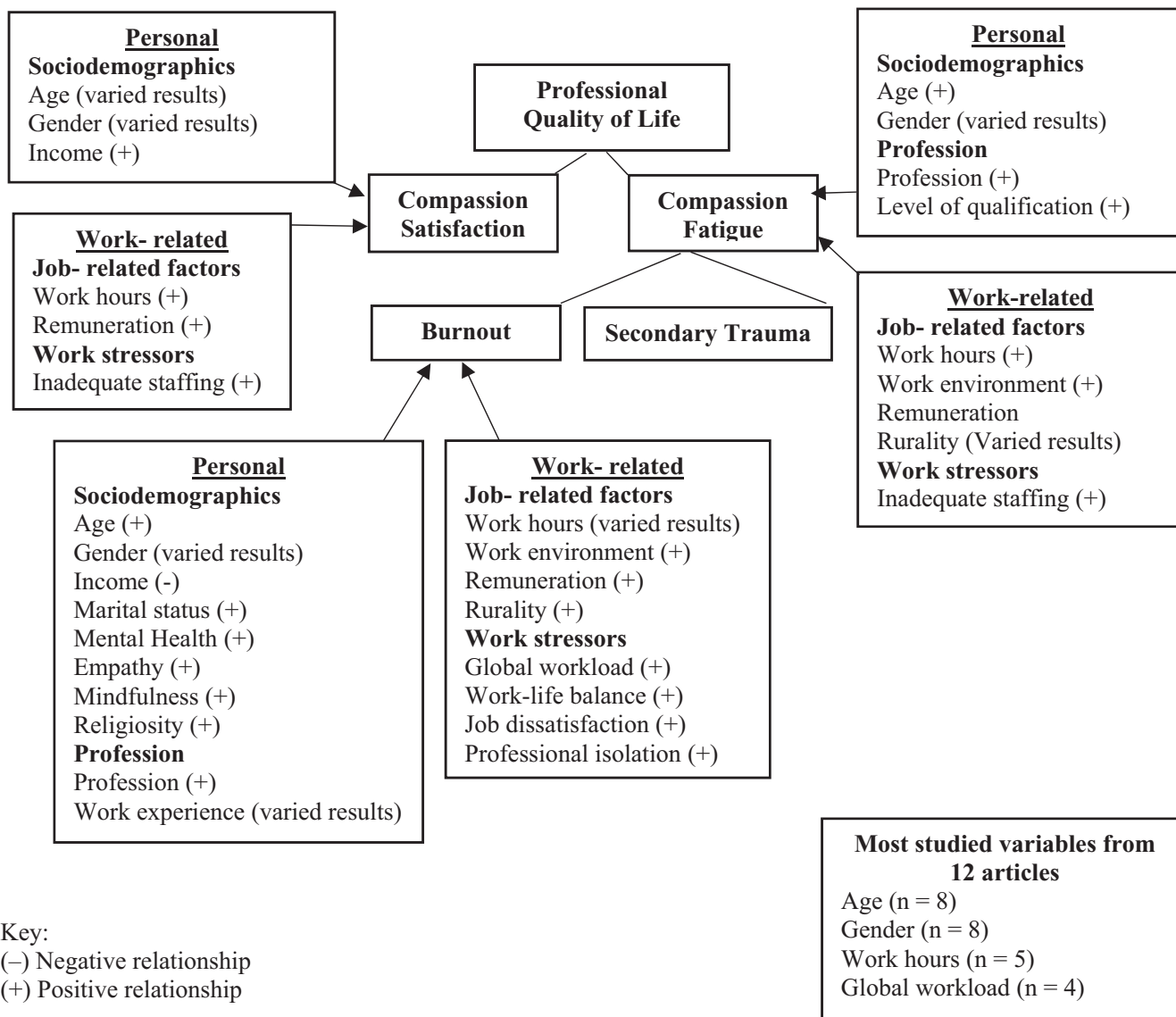


FIGURE 2 Visual representation of potential predictor variables for compassion satisfaction and compassion fatigue using the ProQOL model

(see also the Cavanagh et al review),¹⁸ which may reflect the dominance of these professions in health care in Western nations, particularly as front-line workers.³⁷ It may also be that the recruitment of clinically based front-line health care workers in research occurs because of their organisations' engagement in academic research programs and partnerships such as Clinical Data Research Networks, which operate in predominantly clinical settings.³⁸

We anticipated that the existing literature may have assessed the impacts of barriers to rural health care service provision, including accessibility to local referral services, adequate resourcing of equipment and funding to develop improved health outcomes. However, no studies identified in our review considered the impact of these variables. These barriers have been reported previously by

practitioners with burnout as having a significant and negative impact on rural health practitioners' mental health, longevity in their role and quality-of-service provision for clients. They are therefore of interest as possible predictors of compassion fatigue.³⁹

By not limiting the search strategy to any type of health care profession, care provision or system, we anticipated the findings would capture the impact of providing rehabilitation health care in schemes such as disability management (including the NDIS), workers' compensation and life insurance case management.⁴⁰ However, none of the studies included in this review provided information about health care professionals working in rehabilitation settings in rural and remote locations. It may be that the professional isolation and lack of access to professional development and organisational support faced by this

section of the health care workforce have contributed to a culture of ambivalence towards research.⁴¹ Regardless, this finding suggests a significant gap in a rapidly growing sector of the health care workforce, especially given the rise in rehabilitation health care in Australia and other Western nations, including the USA.⁴²

In urban areas, rehabilitation health care workers reported a moderate risk of burnout, an extremely high risk of developing compassion fatigue and an extremely high potential for developing and maintaining compassion satisfaction.⁴³ Without studies from rural contexts, it is unclear whether the risks for these conditions are the same for rural and remotely practising rehabilitation health care workers. Further, none of the studies reported on the nature of work undertaken in rehabilitation settings by rehabilitation health care workers for people with disabilities or occupational injuries. This finding was unexpected considering the size of this health care workforce and the rapidly growing nature of rehabilitation health care in other Western nations.⁴⁴

It could be argued that what is known about risk and predictive factors for compassion satisfaction and compassion fatigue that arise from existing models of care, primarily from urban settings, could be applied to rural settings. However, in instances where urbanised health care models have been engaged in rural locations, they tend not to be fit for purpose due to the geographical, cultural and socio-economic barriers unique to rural health care.^{45,46} For example, in their assessment of health care provisioning in rural and urban locations, Weinhold and Gurtner⁴⁷ advised that attributes of providing health care differed markedly between the two settings. This difference is mainly related to the need for rural health care workers to manage the barriers patients face with accessibility, affordability and difficulty obtaining holistic health care. Indeed, health care workers who have worked under urbanised models of care and then practise in rural and remote locations are often unprepared to manage these barriers and others unique to rural and remote health care. Their inability to provide effective health care results in distress, frustration and feelings of being unsupported.⁴⁸ Identifying predictors for compassion satisfaction and compassion fatigue therefore appears to be best done in the context of the location of health care delivery and informed by the workers who are engaged in delivering services to overcome challenges of accessibility, opportunity and retention.⁴¹

There are limitations to this study that need to be considered. Although a thorough review was undertaken, eligible studies may have been missed as we did not review all databases. The search was limited to publications in English-reporting studies conducted in Western nations.

All studies identified in this review used a cross-sectional design, so we can only comment on the relationships between variables rather than causation. One-third of the studies had low response rates, which increases the risk of a non-response bias and possible over- or under-representation of subgroups of health care workers in these studies. None of the eligible studies distinguished between rural or remote settings in their analyses, so we could not report any potential predictor variables specific to these two rural locations. Finally, all studies were self-reported responses, which carries risks such as inflated or minimised responses to lived experiences, the impact of employer involvement on providing honest answers and self-stigma.

This review identified several areas for future research. Of interest was that few potential predictors had consistent findings in any of the conditions. Studies that adopt a longitudinal design to explore the influence of sociodemographic and work-related variables on the development of compassion satisfaction and compassion fatigue would provide greater clarity on identifying at-risk health care workers in rural and remote locations. Participants in the majority of studies in this review were nurses and physicians. Having information about predictors for a broader range of health professions working in clinical and allied health care in rural and remote locations would provide a better foundation for identifying specific prevention interventions for clinical and community-based workers. The admission criteria of many health care training agencies take rural lived experience into consideration. Studies that explore the rural origins of health care workers or formative years spent in rural locations as predictors of compassion satisfaction and compassion fatigue would identify differences between local and relocated health care workers. Few studies in this review reported predictors of compassion satisfaction. Given the central role of compassion satisfaction in preventing compassion fatigue, studies that identify predictors of compassion satisfaction in rural and remote health care workers are now needed. Lastly, recruitment methods that attract larger samples of rural and remote workers to research will obtain a clearer picture of the different risk and protective factors between urban and rural and remote cohorts and between rural and remote cohorts.

5 | CONCLUSION

The results from this review show that little work has concentrated on identifying predictors of compassion satisfaction and compassion fatigue in rural and remote health care workers systematically or comprehensively. Several sociodemographic and work-related variables were identified

as potential predictors in several studies, although few had consistent findings in any of the conditions. The search did not reveal any studies that reported potential predictors of compassion satisfaction and compassion fatigue in health care workers in rehabilitation settings in rural and remote locations. Further research with this group of health care workers is required to inform employers, policy-makers and rehabilitation health care workers of the risk and protective factors faced with rural and remote practice.

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CONFLICT OF INTEREST

Kelly McGrath, Lynda Matthews and Rob Heard declare that they have no conflict of interest.

AUTHOR CONTRIBUTIONS

KM: conceptualization; formal analysis; methodology; writing – original draft; writing – review & editing. LRM: conceptualization; formal analysis; methodology; supervision; writing – original draft; writing – review & editing. RH: conceptualization; methodology; supervision.

DISCLOSURE

I certify that no external parties have a direct interest in the results of the research supporting this article and no financial assistance was received by any of the authors to fund the study.

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