

The Cost of Caring: Compassion Fatigue Among Peer Workers in Overdose Response Settings in British Columbia

Zahra Mamdani

BC Centre for Disease Control <https://orcid.org/0000-0002-3158-9618>

Sophie McKenzie

BC Centre for Disease Control

Emma Ackermann

The University of British Columbia School of Population and Public Health

Rayne Voyer

RainCity Housing

Fred Cameron

SOLID Outreach Society

Tracy Scott

RainCity Housing

Bernadette (Bernie) Pauly

Canadian Institute for Substance Use Research - University of Victoria

Jane A. Buxton (✉ Jane.Buxton@bccdc.ca)

University of British Columbia <https://orcid.org/0000-0003-2295-393X>

Research

Keywords: compassion fatigue, compassion satisfaction, secondary traumatic stress, burnout, peer workers, overdose response settings

Posted Date: October 11th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-957588/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Abstract

Background

The drug toxicity crisis has had dramatic impacts upon communities of people who use substances. Peer workers, individuals with lived/living experience of substance use who work in overdose response settings, are particularly susceptible to negative impacts on wellbeing caused by this crisis. Coupled with the devastating effects of the COVID-19 pandemic including reduced capacity and hours of overdose prevention services and physical distancing regulations, the burden placed upon peers is large. However, these mental health impacts have yet to be studied and measured.

Methods

The Professional Quality of Life Scale survey (Version 5) was taken by 47 peer workers between September 2020 and March 2021 to assess compassion satisfaction and compassion fatigue. It was administered as a part of a larger survey administered by peer research assistants - to evaluate the effectiveness of interventions identified and implemented through a peer-led project. Some questions from the tool were also asked prior to implementation of the intervention (September 2020). Participants were recruited by their organizational managers and paid a \$25 honorarium.

Results

Our study uncovered a HIGH mean score for compassion satisfaction, a LOW mean score for burnout, and a MEDIUM mean score for secondary traumatic stress among peers working in overdose response settings in British Columbia. We also found changes before and after implementation of the intervention. After implementation, peer workers felt more satisfied from their work, more connected to others, less worn out and were less affected by the traumatic stress of those they help.

Conclusion

Although peers derive significant pleasure and fulfillment from their jobs, i.e., compassion satisfaction, they also face considerable feelings of overwhelmingness, i.e. burnout, and stress due to continuous exposure to the trauma of the people they support, i.e. secondary traumatic stress. These results lay the groundwork for further research on the intersectional factors contributing to negative mental health impacts upon peer workers and highlight potential strategies that bolster the fulfillment they derive from their jobs.

Background

The drug toxicity crisis was declared a public health emergency in British Columbia, Canada in April 2016. Since then, peer workers have been and are at the forefront of overdose response initiatives [1–6] repeatedly exposed to trauma and deaths from overdoses. Peer workers are individuals with lived and/or living experience of substance use who work in overdose response settings. Peer workers can empathize with the stress of their clients, but also know or have lived the same realities [5]. Peer workers' shared experience with their clients, coupled with the socio-economic marginalization associated with substance use, renders them particularly vulnerable to mental health harms [7].

Evidence from the BC Coroners Service also shows that illicit drug toxicity deaths have risen since the onset of the coronavirus disease of 2019 (COVID-19) and the implementation of public health measures including physical distancing in March 2020 [8]. This increase in deaths is potentially due to increased toxicity of the drugs and risk of people using substances alone. Over time, the upward surge in overdose deaths may have become normalized in the eyes of the public, but it is devastating for peer workers who may be at risk of death themselves, and are not only facing deaths of clients, but of friends and family members, at a time when there is little opportunity for grieving.

The illicit drug toxicity crisis is well-documented in academia but is often reported in a sterile, statistical fashion [9–12]. More specifically, the harmful effects of the toxic drug supply are often overlooked in a sea of statistics and sweeping categorical statements. Thus, the profound impacts upon individuals constantly exposed to overdoses are rarely discussed.

The terms “compassion fatigue” and “burnout” were coined in the 80s and 90s to identify and categorize the increasingly prominent mental health deterioration of those working in helping professions such as nurses, doctors, therapists, and social workers [13–20]. Compassion fatigue is described as an individual's “diminished capacity to care as a consequence of repeated exposure to the suffering of [others]” [21]. CF is closely associated with secondary traumatic stress (STS) defined as the stress of repeated exposure to trauma of others rather than from exposure to the trauma itself [21, 22]. CF is also linked with burnout, “a state of physical and mental exhaustion caused by a depleted ability to

cope with one's everyday environment, resultant from one's responses to the ongoing demands and stressors of one's daily life" [22, 23]. While many definitions of burnout tend to place the onus on the individual for lacking coping skills, it is important to note that this inability to cope is, more often than not, a result of one's perceived demands outweighing the resources available to them [22]. Studies have indicated that burnout and STS are closely linked in that when burnout increases, STS also increases [24].

Compassion Satisfaction (CS), on the other hand, is defined as the pleasure one derives from doing their work, including from helping others, contributing to the work setting, and to the greater good of the society [25]. CS is inversely associated with burnout and STS such that when CS is high, burnout and STS are low [24].

Factors associated with CF include workload intensity, inadequate rest time periods between shifts, task repetitiveness, low control and low job satisfaction, poor resilience, lack of meaningful recognition, and poor managerial support [20]. At the individual-level, CF can result in sleep disturbance, emotional distress, fatigue, headaches, and an increased risk of developing depression, anxiety and posttraumatic stress disorder [14, 19, 20, 26]. In the workplace, CF may be associated with staff turnover, poor morale, decreased job satisfaction, lower productivity, and result in lower quality of care [16].

A study by Winstanley highlights the concept of "Overdose Compassion Fatigue" (OCF), i.e. "distress or a reduction in empathy resulting from knowledge of or exposure(s) to overdose-related harms" [27]. The author identifies three precursors to OCF: 1) exposure to overdose, 2) desire to help people, 3) belief that an intervention such as naloxone administration will help [27]. OCF can result in secondary trauma and burnout that is characterized by fatigue, apathy, decrease in caring, feeling overwhelmed or irritable [27]. Individuals may be frustrated with the person who overdosed and/or the system that is not able to adequately respond to the needs of these individuals. It is, however, important to note that OCF has not been applied to the context of peer workers.

OCF is different from occupational burnout because it can result from a single traumatic exposure, whereas burnout is believed to occur over a period of time and resulting from an accumulation of factors [13, 16]. Similarly, OCF may occur from a single exposure (non-fatal or fatal overdose) and is independent of potential confounding factors (e.g., personal history of trauma, low social support, and work stress) [27]. Since peer workers often witness overdoses among those with whom they have an emotional connection, and may also be at risk of experiencing overdoses themselves, the distress they feel would be expected to be much larger than those of individuals experiencing OCF from a single exposure.

Studies have shown that working in overdose response settings can be stressful and emotionally taxing for peer workers due to the repeated exposure to death and trauma faced by others [3, 5, 28–32]. Many peer workers have reported feeling burnout and are "running [themselves] ragged" due to the constant worrying and inability to unwind [5]. Limited research studies have sought to identify the stressors faced by peer workers in overdose response settings and implement support interventions to combat the potential harmful effects of these stressors [5]. The Peer2Peer Project, led by the authors of this paper, aimed at identifying, implementing and evaluating support interventions for peer workers in overdose response settings. An intervention model titled "ROSE" was implemented at two pilot organizations in British Columbia. ROSE stands for Recognition or peer work, Organizational support, and Skill development for Everyone. The intervention consisted of multiple strategies that were identified and developed by and for peer workers.

A baseline survey was administered to the peer workers at the pilot sites prior to implementation of the ROSE model and consisted of some questions from the Professional Quality of Life survey which measures CF and CS. The results of the baseline survey show clear indicators of CF among peer workers. To our knowledge, no studies have, thus far, quantitatively measured CF among peer workers in overdose response settings.

The aims of this paper are: (1) to quantitatively assess CS, STS and burnout among peer workers who are working in overdose response settings (2) to identify and evaluate potential supports needed by peer workers in overdose response settings. It is important to note that the primary measures reported in this paper are for CF and CS among peer workers for whom support interventions had already been designed and implemented as part of the Peer2Peer Project. Scores may differ for peer workers for whom such supports do not exist through a structured program. Furthermore, the survey was administered during COVID-19 which may have affected the results.

Methods

Study Participants, Settings and Recruitment

This study was a component of the Peer2Peer research project, which is a community based participatory research project aimed at identifying, designing, implementing, and evaluating supports for peer workers. The research is a collaboration between academics and two organizations located in four urban cities spanning three of the five BC health regions. The two organizations include: 1) SOLID Outreach Society - a peer worker-led organization on Vancouver Island that educates, advocates and provides services for individuals that use substances [33], and 2)

RainCity Housing - a not-for-profit, housing-first organization in Vancouver Coastal and Fraser regions that provides housing and support services for people living with mental health, substance use, and other challenges [34].

The research team consists of academic researchers as well as peer research assistants (PRAs) from the two organizations. The PRAs were involved in all aspects of the research including conceptualization, data collection, data analysis, validation, and knowledge translation.

We used a descriptive cross-sectional design. Participants were recruited by their organizational managers to complete the paper survey. Participation was voluntary and participants were given a \$25 honorarium to complete the survey. The inclusion criteria for participation were: (1) working, formally or informally, in overdose response settings, (2) identifying as a peer worker (3) being over the age of 18, (4) being able to complete a questionnaire in English.

Instrument

The Professional Quality of Life Scale (ProQOL) survey (version 5) was used to assess compassion satisfaction (CS) and compassion fatigue (CF) [35]. CF is measured in terms of secondary traumatic stress (STS) and burnout [16].

The ProQOL survey version 5 is divided into three subscales based on what it is intended to measure: CS (10 items), burnout (10 items), and STS (10 items). Scores can be categorised as low, medium, and high in each of the three subscales (≤ 22 , low; 23–41, medium; and ≥ 42 , high) [35].

Data Collection

The ProQOL survey (Version 5) was administered as part of a larger follow-up survey (See Appendix 1) to evaluate the effectiveness of the ROSE model and the Peer2Peer project at three of the four sites where the intervention was implemented (the peer program at the fourth site was dissolved half-way through the implementation). In addition to the full ProQOL tool, the survey included a demographic questionnaire, and questions from other validated tools such as the SF-12 survey and the Job Satisfaction Survey.

Prior to implementation of the ROSE model, a baseline survey was administered at all four sites. While most of the questions were common across the baseline and the follow-up surveys, the latter consisted of some additional questions. For example, the baseline survey included select questions from the ProQOL survey, while the follow-up survey consisted of the entire ProQOL tool. In this paper, we focus on the results of the full ProQOL survey conducted as part of the follow-up survey. Other relevant questions that provide insight into the ProQOL subscales have also been included in the analysis. Furthermore, we provide comparisons between the baseline and follow-up survey data, where data is available.

The follow-up survey was administered between September 2020 and March 2021. This period was selected for two reasons: 1. September 2020 marked one year since the implementation of the ROSE model at the pilot sites through the Peer2Peer project, and 2. Informal discussions with peer workers at the pilot sites revealed a high amount of stress and burnout due to the increased number of overdose deaths since the onset of COVID-19 and an overall increased workload due to the pandemic.

The follow-up survey was administered to peer workers at the pilot sites by PRAs. Prior to survey administration, informed consent was obtained from participants. Since the surveys were administered during the peak of the COVID-19 pandemic, the PRAs read out the questions and recorded the peer workers' responses to minimize the handling of the surveys. Online surveys were not an option given the low access to technology and in some cases, limited computer literacy among peer workers.

Data Analysis

The analysis of quantitative survey data was conducted by an academic researcher and summarized in a report which was presented to the PRAs for data validation. The Likert scale responses were converted into numerical values and scores were calculated for each sub-scale. The mean score was calculated for each sub-scale and categorized as low, medium, or high, based on the scoring instructions for version 5. Non-parametric tests (Mann-Whitney U test and Kruskal-Wallis H) were conducted to compare means in each sub-scale by participants' socio-demographic characteristics, i.e., gender, age, location, and ethnicity. Spearman's rank correlation test was conducted to measure the correlation between sub-scales of the ProQOL survey. All analyses were conducted using R statistical software, version 4.0.2 [36] and a p-value less than 0.05 was considered statistically significant.

Ethics

The study received Research Ethics approval from the University of British Columbia Research Ethics Board (REB #: H18-00867) and harmonized approval from University of Victoria and Island Health.

Results

The survey was completed by 47 peer workers: 8 from the Fraser region (Maple Ridge), 18 from the Vancouver Coastal region (Vancouver) and 21 from the Island Health region (Victoria). The demographic profile of survey participants is presented in Table 1. Most survey participants were male (55%), over 40 years old (57%), and self-identified as non-Indigenous (77%).

Table 1
Demographic characteristics of participants

Total Sample	
n, (%)	
n=47, (100%)	
Gender	
Male	26 (55%)
Female	21 (44%)
Age	
40 and under	20 (43%)
41-50	14 (29%)
Over 51	13 (28%)
Location	
Vancouver	18 (38%)
Victoria	21 (45%)
Maple Ridge	8 (17%)
Ethnicity	
Reported Indigenous	11 (23%)
Non-Indigenous	36 (77%)

Compassion Satisfaction

The mean CS score among the participants was 42 (SD=5.16) which can be classified as HIGH according to the ProQOL Version 5 scoring instructions [35] (Table 1). Most individuals scored high for CS (59.6%, n=28), over a third of the participants (40%, n=19) scored in the medium range, and none scored low.

The high CS score may be explained by the good relationships peer workers have with the people they work with. A vast majority (91%) of the participants agreed that they like the people they work with (the remaining 9% were neutral, no one disagreed).

A sense of pride and feeling that they have something important to contribute to society may also be a predictor for compassion satisfaction among peer workers. All (100%) of the participants indicated that they felt a sense of pride in their job which would explain the overall HIGH CS score. Likewise, participants that felt that they, at least sometimes (sum of 'sometimes', 'often' and 'always'), had something important to contribute to society had 1.5 times higher odds of scoring HIGH on the CS scale compared to those that selected 'rarely' or 'never'.

Table 3 indicates the mean scores for each sub-scale by socio-demographic characteristics. Women had a significantly higher CS score than men (44 vs 41). Furthermore, individuals in Maple Ridge and Vancouver had a significantly higher CS score than those in Victoria (45 and 44 compared to 39). Albeit non-significant, individuals in the over 51 age group had a slightly higher CS score than those in the other age groups (43 compared to 41 and 42). There were no observed differences in the CS score between the different ethnicities.

While the CS score for the baseline survey conducted prior to implementation of the ROSE model cannot be calculated, there is a significant increase in the responses of some questions that contribute to the CS score. For example, the percentage of participants who selected 'often', 'very often' or 'always' for the question 'My work makes me feel satisfied' increased from 64% in the baseline to 85% in the follow-up (p=0.03). More participants (88%) also 'have happy thoughts and feeling about those [they] help and how [they] could help compared to the baseline (63%) (p=0.002). Also, the percentage of participants that 'believe [they] can make a difference through [their] work' increased from 75–92%

($p=0.09$). These results indicate that the ROSE model strategies that were implemented at the pilot sites have potentially helped to improve CS among peer workers.

Burnout

The mean burnout score was 20 (SD=5.50) which falls in the LOW range (Table 1). At an individual level, almost two thirds of the participants (63.8%) scored LOW and the remaining scored MEDIUM on the burnout scale. This indicates that burnout was low among peer workers at the time the survey was conducted.

There are many factors that potentially explain burnout among peer workers. One such factor is receiving recognition for the work done by peer workers. Participants that agreed that they were recognized for the work they do had 2.72 times higher odds of scoring LOW for burnout (vs. scoring MEDIUM). Over three-fourths of the participants agreed that they felt recognized for the work they do, accounting for the overall LOW burnout score.

On a related note, since equitable pay is often an indicator for recognition and respect, perception of pay being unfair may also be a potential reason for burnout. Two thirds of the participants agreed that they were paid a fair amount for the work they do, and those that agreed had 2.1 times higher odds of scoring LOW on the burnout scale compared to those that disagreed.

Another predictor for burnout is workload. Participants that felt they had too much to do at work had a 73% higher odds of scoring MEDIUM on the burnout scale (no one scored HIGH), compared to those who did not feel they had too much work.

Discussions with PRAs during data validation also revealed that the workload of peer workers has increased since the onset of COVID-19. This was also shown in the survey results whereby almost a half of the participants (47%) indicated that their workload had increased, and 19% indicated that there had been no change in the workload.

Verbal conflict at work also seems to be a predictor for burnout. Participants that agree that there is too much bickering and fighting at work are 4.3 times more likely to score MEDIUM for burnout (no one scored HIGH) compared to those that disagreed. However, 70% of the participants do not think that there is too much bickering and fighting at work which would explain the overall LOW score for burnout.

These results indicate that burnout may be associated with lack of recognition and appreciation in the workplace (including perception of inequitable pay), high workload, as well as a non-supportive work environment, characterized by bickering and fighting in the workplace.

Table 3 indicates the mean scores for each sub-scale by socio-demographic characteristics. Men had a slightly higher burnout score than women (21 vs. 19), along with individuals in the over 51 age group (21 vs. 20). These differences were not statistically significant. There were statistically significant differences in the burnout score by location, with individuals in Victoria and Maple Ridge having significantly higher burnout scores (23 and 22 respectively) than Vancouver (16). There were no observed differences in the burnout score between the different ethnicities.

For the questions in the burnout scale that were common across the baseline and follow-up surveys, we see some changes which may explain the LOW burnout score among peer workers. For the question 'I feel connected to others', there was an increase in the number of participants that selected 'often', 'very often' or 'always' from 37% in the baseline to 65% in the follow-up ($p=0.003$). Conversely, for the question 'I feel worn out because of my work as a peer worker', the number of participants that selected 'often', 'very often' or 'always' decreased from 16–10% ($p=0.2$). These results indicate that the ROSE model strategies may have helped to decrease burnout among peer workers at the pilot sites.

Secondary Traumatic Stress

The mean STS score was 23 (SD=7.34) which is MEDIUM (Table 1). While most participants (53%) scored LOW on the STS scale, almost 45% scored MEDIUM and 2% scored HIGH. While no other questions on the survey provided insight into the reasons for STS among peer workers, discussions with PRAs during data validation as well as published literature provides some explanation, and this has been described in the discussion.

Table 3 indicates the mean scores for each sub-scale by socio-demographic characteristics. Men had a slightly higher STS score than women (24 vs. 23). Furthermore, individuals in the 41-50 age group had a slightly higher STS score than the other age groups (26 compared to 21 and 24). Individuals identifying as Indigenous had a lower STS score compared to those that identify as non-Indigenous (22 vs 24). These differences were statistically insignificant. There were statistically significant differences in the STS score by location, with individuals in Maple Ridge and Victoria having significantly higher STS scores (29 and 25), compared to Vancouver (19).

Compared to participants in the baseline survey, less participants think that they often, very often or always think they might have been affected by the traumatic stress of those they help (12% compared to 30%, $p=0.008$). Furthermore, less participants are finding it difficult to separate

their personal lives from their life as peer workers (14% compared to 17%, $p=0.8$). These results show a trend of decreasing STS and this is potentially due to the effectiveness of some of the ROSE model strategies.

Table 2
ProQOL sub-scale scores

Sub-scale	Score [35]	n (%)	Mean (μ)	Standard Deviation (σ)
Compassion Satisfaction	LOW (≤ 22)	0 (0%)	42	5.16
	MEDIUM (23 to 41)	19 (40.4%)		
	HIGH (≥ 42)	28 (59.6%)		
Burnout	LOW (≤ 22)	30 (63.8%)	20	5.50
	MEDIUM (23 to 41)	17 (36.2%)		
	HIGH ($>=42$)	0 (0%)		
Secondary Traumatic Stress	LOW (≤ 22)	25 (53.2%)	23	7.34
	MEDIUM (23 to 41)	21 (44.7%)		
	HIGH (≥ 42)	1 (2.1%)		

Table 3
ProQOL subscale scores by socio-demographic characteristics

	Total Sample	Compassion Satisfaction		Burnout		Secondary Traumatic Stress	
	n, (%)	Mean score, Rank	<i>U/H (p)</i>	Mean score, Rank	<i>U/H (p)</i>	Mean score, Rank	<i>U/H (p)</i>
Aggregate	n=47, (100%)	42		20		23	
Gender			<i>U = 176 (p=0.04)</i>		<i>U = 325.5 (p=0.26)</i>		<i>U = 302 (p=0.54)</i>
Male	26 (55%)	40		21		24	
Female	21 (44%)	44		19		23	
Age			<i>H = 0.84 (p=0.66)</i>		<i>H = 0.66 (p=0.72)</i>		<i>H = 4.36 (p=0.11)</i>
40 and under	20 (43%)	42		20		21	
41-50	14 (29%)	41		20		26	
Over 51	13 (28%)	43		21		24	
Location			<i>H = 10.39 (p=0.006)</i>		<i>H = 14.18 (p=0.0008)</i>		<i>H = 13.08 (p=0.0014)</i>
Vancouver	18 (38%)	44		16		19	
Victoria	21 (45%)	39		23		25	
Maple Ridge	8 (17%)	45		22		29	
Ethnicity			<i>U = 229.5 (p=0.44)</i>		<i>U = 175.5 (p=0.58)</i>		<i>U = 174 (p=0.55)</i>
Reported Indigenous	11 (23%)	42		20		22	
Non-Indigenous	36 (77%)	42		20		24	
Note: U= Mann-Whitney U Test, H = Kruskal-Wallis Test, p=significance level							

[Table 4]

Table 4
Responses of Selected ProQOL Questions Pre- vs. Post- Implementation of the ROSE Model

	Baseline n, (% of non-missing data)	Follow-up n, (% of non-missing data)	p-value
My work makes me feel satisfied			<i>p=0.032</i>
Very often or Always	12 (26%)	18 (38%)	
Often	18 (38%)	22 (47%)	
Sometimes	14 (30%)	6 (13%)	
Rarely	1 (2%)	0 (0%)	
Never	2 (4%)	1 (2%)	
I have happy thoughts and feelings about those I help and how I could help them.			<i>p=0.002</i>
Very often or Always	9 (19%)	20 (42%)	
Often	21 (44%)	22 (46%)	
Sometimes	17 (35%)	6 (13%)	
Rarely	1 (2%)	0 (0%)	
Never	0 (0%)	0 (0%)	
I believe I can make a difference through my work.			<i>p=0.094</i>
Very often or Always	20 (43%)	26 (54%)	
Often	15 (32%)	18 (38%)	
Sometimes	10 (21%)	3 (6%)	
Rarely	2 (4%)	1 (2%)	
Never	0 (0%)	0 (0%)	
I feel connected to others			<i>p=0.003</i>
Very often or Always	5 (11%)	13 (27%)	
Often	12 (26%)	18 (38%)	
Sometimes	20 (43%)	14 (29%)	
Rarely	10 (21%)	1 (2%)	
Never	0 (0%)	2 (4%)	
I feel worn out because of my work as an experiential worker			<i>p=0.2</i>
Very often or Always	1 (2%)	3 (6%)	
Often	7 (14%)	2 (4%)	
Sometimes	15 (31%)	15 (31%)	
Rarely	19 (39%)	12 (25%)	
Never	7 (14%)	16 (33%)	
I find it difficult to separate my personal life from my life as a peer worker			<i>p=0.8</i>
Very often or Always	2 (4%)	2 (4%)	
Often	6 (13%)	5 (10%)	
Sometimes	14 (30%)	18 (37%)	
Rarely	15 (32%)	9 (18%)	
Never	10 (21%)	15 (31%)	

	Baseline n, (% of non-missing data)	Follow-up n, (% of non-missing data)	<i>p-value</i>
I think that I might have been affected by the traumatic stress of those I help			<i>p=0.008</i>
Very often or Always	3 (6%)	3 (6%)	
Often	12 (24%)	3 (6%)	
Sometimes	18 (37%)	15 (31%)	
Rarely	8 (16%)	11 (22%)	
Never	8 (16%)	17 (35%)	

Correlations between ProQOL subscales

In Table 5, we show that the sub-scales were correlated. CS was negatively correlated with burnout ($p < 0.05$) and STS ($p > 0.05$), although the correlation with the latter was not statistically significant. This means that as CS increases, burnout and STS decrease. On the other hand, burnout and STS were positively correlated with each other ($p < 0.05$), which means that increase in one is often linked with increase on the other subscale. This would explain why both burnout and STS are considered indicators for Compassion Fatigue (CF). These findings have implications for interventions that may be implemented to support peer workers to reduce CF among them.

Table 5
Bi-variate correlations between ProQOL subscales

	Compassion Satisfaction	Burnout	Secondary Traumatic Stress
	ρ (p value)	ρ (p value)	ρ (p value)
Compassion Satisfaction		-0.40 ($p=0.005$)	-0.27 ($p=0.07$)
Burnout	-0.40 ($p=0.005$)		0.70 ($p=0.03 \times 10^{-6}$)
Secondary Traumatic Stress	-0.27 ($p=0.07$)	0.70 ($p=0.03 \times 10^{-6}$)	
Note: ρ = Spearman's rank correlation estimate. p =significance level			

Discussion

The aim of this study was to explore and measure compassion satisfaction and compassion fatigue (characterized by STS and burnout) among peer workers in BC. Our study shows that peer workers in overdose response settings during dual public health emergencies experience HIGH CS, LOW Burnout, and MEDIUM STS. As there is no prior literature relating CF and CS to peer workers, this study provides novel findings and lays the groundwork for further research, especially among peer workers who do not have standardized access to support interventions such as the ROSE model. By comparing responses to questions which were common across the pre- and post- implementation survey, this paper sheds light on the potential effectiveness of the ROSE model interventions in addressing CF among peer workers.

The high CS score among peer workers underscores the rewarding yet incredibly difficult nature of peer work. The high CS score can be explained with findings from our previous paper outlining the meaning and motivation peers derive from their work including a sense of purpose from helping others, pride from finding and being an inspiration to others, and a sense of belonging within a community [37]. Focus group participants enthusiastically shared how peer work has provided new meaning to their lives amid a society that socially, politically, and financially stigmatizes them. It is, therefore, unsurprising that 100% of survey participants felt a sense of pride in their job. Their stories highlight how the pleasure they derive from their work has a direct impact upon reducing their levels of stress. As highlighted by one peer worker in our previous paper: "I look forward to going [to work] because I feel like I'm doing some good out there" [37].

Our results show that since the implementation of the ROSE model, there is an increase in the number of peer workers that 1) feel satisfied from their work, 2) have happy thoughts and feelings about helping others, and 3) believe that they have made a difference through their work. Since these factors contribute to the overall CS score, the results suggest that the ROSE model strategies that were implemented at the pilot sites may have potentially helped to improve CS among peer workers.

Our study found a higher CS score for women than men. Although this could indeed be due to higher levels of satisfaction derived from work and personality differences between the genders (women are believed to be more empathetic [38, 39]), it also could be due to differential item functioning inherent in the ProQOL scale. This occurs when groups of people respond to a question differently due to differences in

interpretation or understanding of the measurement tool rather than true differences in the construct being measured between the groups [40]. A study by Heritage et al. identified measurement weaknesses in the form of gender-variant responding in a study of registered nurses in Australia; they found that male nurses responded with higher ratings than female nurses on the Likert scale of two questions. However, the difference was seen for CF rather than CS [40]. Regardless, the differential answering pattern may explain the difference we found between genders and makes it difficult to draw conclusions regarding gender-based differences in CS between male and female peer workers.

For STS, the mean score fell in the MEDIUM range, and almost 47% of the participants scored MEDIUM to HIGH on the STS scale, which is a considerable amount. This is especially alarming given that the participants in this study already had access to support interventions through the ROSE model. Discussions with PRAs during data validation indicate that over the five years since the declaration of the drug toxicity crisis as a public health emergency, peer workers have been exposed to significant trauma and death which has increased with the onset of COVID-19 [5]. Research has indicated that even a single exposure to a fatal or non-fatal overdose can lead to considerable stress, burnout and overdose-related compassion fatigue [27]. It is expected, therefore, that over time, this constant exposure to death would lead to feelings of numbness and hopelessness [27].

Many studies have shown high STS among doctors, nurses and other frontline workers [24, 26, 41–44]. Unlike other first responders, however, peer workers may not have the same opportunities to unwind after a stressful day at work; their work is often 24 hours a day as their personal and professional lives are inter-twined and they live and work within a community traumatically impacted by the drug toxicity crisis [5]. This repeated exposure to others' suffering coupled with similar personal issues, as well as lack of institutional supports for people who use substances combine and build on each other to generate STS. A study by Ruiz-Fernández et al revealed that the mean STS score of their sample was 19.9 whereas the mean of our sample was 23 [24]. It must be noted that the former study used Version 4 of the ProQOL which has slightly different scoring and interpretation. The higher STS score for peer workers compared to healthcare professionals may be due to several factors: (1) unlike peer workers, healthcare professionals such as doctors and nurses, may have systems of support such as access to counselling [45, 46], (2) healthcare professionals' work arrangements are often stable and long-term unlike the work arrangements of peer workers which are often precarious [47], and perhaps most importantly (3) doctors and nurses often do not have an emotional attachment with their patients and do not share the same lived/living experience with their patients, which may potentially make it easier for them to deal with secondary trauma. The higher levels of STS identified in peer communities are indicative of an overarching institutional system that devalues the expertise of people who use substances.

Despite the cumulative effects of the drug toxicity crisis and the onset of COVID-19 which has led to an increased number of drug toxicity deaths, there are some changes observed among peer workers since the implementation of the ROSE model. Compared to participants in the baseline survey, less participants in the follow-up: 1) are affected by the traumatic stress of those they help, and 2) find it difficult to separate their personal lives from their life as peer workers. While these results may be an artifact of the number of new staff that may not have accumulated the stress of working in overdose response settings, the results may also suggest that the ROSE model strategies are contributing towards reducing STS among peer workers.

Our sample had a mean burnout score of 20, which is classified as LOW. A potential explanation for this is that burnout is "believed to occur over a period of time and resulting from an accumulation of factors" [27]. Discussions with organizational managers in Vancouver and Victoria reveal that many staff were new and hired during the COVID-19 pandemic. As such, it is possible that the newer staff have not yet accumulated the stress and trauma of working as peer workers and are thus feeling less burnt out.

There is also a relationship between burnout and staff turnover rate. A study examining rates of burnout among Child Protection Workers in Colorado demonstrated very low rates of burnout, and this was attributed to the high turnover rate, indicating that burnt out employees may just quit their jobs [16]. A recent study on compassion fatigue among nurses also indicated CF often leads to a change in profession [26]. This is a remarkable difference between other professionals and peer workers; peer workers don't have the liberty to quit their jobs as and when they feel stressed or burnout due to the scarcity of alternate means of employment for people who use substances [47]. When peer workers feel burnt out, they must often continue working because they have few or no other income options. Even those who do leave *formal peer roles* never fully leave *work* as they constantly strive to keep their loved ones and communities safe [5]. In other words, working in overdose response settings and saving lives is not just a *job* for peer workers, it is their reality as individuals with lived/ living experience. Hence, for peer workers, CF is inevitable.

The LOW burnout score among the peer workers at the pilot sites may also point towards the effectiveness of the ROSE model strategies in reducing burnout. Compared to the participants in the baseline survey, less participants in the follow-up are feeling worn out because of their work, and more participants are feeling connected to others. Despite the intervention, however, 36% of the participants fell into the MEDIUM category, demonstrating that more upstream measures may need to be taken to truly impact the burnout faced by peer workers.

Our study uncovered location-based differences in CS, burnout, and STS. Participants in Vancouver had significantly lower burnout and STS compared to Victoria and Maple Ridge. Consultation with PRAs revealed that these differences may be due to the high number of new staff in

Vancouver and the better availability of community resources for people who use substances (PWUS) in that area, such as free food, overdose prevention services, etc. Although the program in Victoria also expanded during our study, doubling in size and hiring many new staff, the burnout and STS scores from Victoria were higher, more closely matching those of Maple Ridge. This unexpected result could be because CS was significantly lower in Victoria compared to the other locations. Without the protective effects of high CS, peer workers in Victoria may have been more severely impacted by burnout and STS resulting in higher scores even among newer staff. Furthermore, with the expansion of the peer program, peer workers were more dispersed across the city, unable to form strong connections with each other and benefit from the family-like support that SOLID is known for [37]. Unlike the other locations, Maple Ridge was a smaller, more tight-knit community of long-time peer workers. Participants in Maple Ridge had the highest CS but also the highest STS, reflecting that being more emotionally connected to the people they support may amplify the impact of both success and trauma [27].

Consistent with other studies [24], we found that CS was inversely associated with burnout and STS, although the association between CS and STS was statistically insignificant. This indicates that a high CS can be a protective factor against burnout and STS and has implications for intervention-planning for peer workers. For example, to reduce burnout among peer workers, more opportunities of work should be created for peer workers, where they feel valued and appreciated.

Previous research has indicated that CF can have significant health impact, including sleep disturbance, emotional distress, and increased risk of depression, anxiety and PTSD [14, 19, 20, 26]. Given these potential health effects, CF among peer workers must not be ignored since they are critical in providing harm reduction services for people who use substances. Organizations must strive to implement supports for peer workers to reduce burnout and STS. Studies have shown that organizational interventions which increase awareness and knowledge of CF [48], or equip individuals with tools to reduce stress during work [49] can reduce CF. Informal and formal peer support can also prevent compassion fatigue [50]. Given the link between CS and feeling recognized at work, organizations must also strive to improve appreciation and recognition for peer workers and pay equitably, based on the peer payment standards [51]. Furthermore, organizations should provide peer workers with options to take paid time off to recuperate, as needed. Since self-care has shown to be effective in reducing CF [52], facilitating peer workers to partake in self-care activities may also be useful.

The ROSE model consists of multiple strategies that can potentially decrease STS and burnout among peer workers. For example, the ROSE model included training for peer workers on mindfulness, destressing and self-care. The ROSE model also included implementation of a Peer Supporter role occupied by a person with lived/ living experience of substance use to provide peer debriefing and counselling services to peer workers, as needed. Additionally, we strived to improve recognition for peer workers by creating awareness of the role of peer workers through videos and anti-stigma training, as well as by introducing photo IDs and business cards to legitimize their roles. Job descriptions were also created to provide role clarity and prevent the relegation of peer workers to menial labour. Teambuilding days were introduced to improve relationships between peer workers within the organization. Our results indicate that the ROSE model strategies hold much promise in reducing CF and improving CS among peer workers in overdose response settings. However, it is difficult to draw conclusions on the effectiveness of the ROSE model since the full ProQOL survey was not conducted prior to implementation. A follow-up survey after multiple years of implementation of the ROSE model is warranted and further research and evaluation is needed.

The illicit drug toxicity crisis has been ongoing for over five years, and given the accumulative effects of burnout and STS, over time, CF among peer workers and its consequent health impact would only be expected to worsen. In addition to implementing organizational supports for peer workers to reduce CF and increase CS, there is a critical need to take to systemic measures, such as decriminalization of substance use, otherwise CF among peer workers may become the next public health crisis.

Although our study is novel, it does have limitations. First, our data is from three metropolitan or large urban centres in BC where our pilot sites are located. Close knit social networks as well as stigma in rural areas may increase the impact of overdose fatalities on their communities [27]. Additionally, although almost all peer workers at the study sites were sampled, the sample size is still small. A more expansive study is needed to fully grasp regional differences in CS, STS and burnout and better represent all peer workers in BC. Also, the survey included some questions that required participants to recall their experiences over a 30-day period, which introduces a potential recall and reflection bias. Furthermore, the negative wording of some questions may have caused confusion while other questions were open to interpretation by participants. This may have resulted in variability of reporting. Over time, different versions of the ProQOL survey have been released [35]. The differences in scoring method and interpretation of CS, burnout, and STS between ProQOL versions make these values difficult to compare across studies [25]. Finally, a 2019 study examining the construct validity of the ProQOL Scale highlighted how "compassion satisfaction and compassion fatigue represent higher and lower levels of the same construct rather than two different constructs" [53]. Therefore, we are cautious in endorsing the reliability of the ProQOL and suggest critical application of our findings. Another limitation is that our sample consisted of peer workers who already had access to the ROSE model strategies and it is difficult to know the effect of these strategies on CF and CS among peer workers; peer workers at other sites without access to such an intervention may have a higher score. As such, our findings are not fully representative of all the peer workers in BC. That said, despite having access to the ROSE model strategies, there is a considerable number of

participants that scored MEDIUM for burnout and HIGH for STS. This indicates the seriousness of the issue and underscores the need for upstream measures to address CF among peer workers in BC.

Conclusion

The results of our survey highlight an important juxtaposition; the deep fulfillment that peer workers derive from their jobs, amid overwhelming measures of Secondary Traumatic Stress and Burnout. These seemingly-opposite observations are not antagonistic – rather, they are intimately linked. Because peers are so deeply connected to the suffering of their clients through their shared lived and living experience, their stress is amplified. In other words, peer workers' unconditional devotion to their work is often at the expense of their physical, mental, and spiritual wellbeing. To establish comprehensive supports for peer workers, the connection between the positive and negative sides of the job must be recognized. Our results indicate that the ROSE model strategies that have been implemented at the pilot sites may have contributed to reducing CF and increasing CS among peer workers. However, the fact that CF is still fairly high despite access to resources points towards a need for more systemic measures, such as decriminalization of substances.

Abbreviations

BC – British Columbia; COVID-19 – Coronavirus Disease of 2019; CF – Compassion Fatigue; CS – Compassion Satisfaction; PRA – peer research assistant; ProQOL – Professional Quality of Life survey; PWUS – people who use substances; ROSE - Recognition of peer work, Organizational support, and Skill development for Everyone; STS – Secondary Traumatic Stress.

Declarations

Ethics approval and consent to participate: The study received Research Ethics approval from the University of British Columbia Research Ethics Board (REB #: H18-00867) and harmonized approval from University of Victoria and Island Health.

Consent for publication: not applicable

Availability of data and materials: The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests: none

Funding: This work was supported by the Health Canada's Substance Use and Addictions Program (Grant 1718-HQ-000030). The funders had no role in the study design, data collection, analysis and interpretation of data or in the writing of the manuscript.

Authors' contributions: JB and BP acquired funding and provided overall project guidance. ZM, JB and BP conceptualized the study and were involved in the decisions regarding methodology. ZM provides general project administration, conducted the data analysis and interpretation for this paper. ZM, SM and EA wrote different sections of the initial draft of the paper, which was collated by ZM. All authors were involved in review and editing and have approved the submitted version.

Acknowledgements: The authors would like to thank the past and present members of the Peer2Peer Research Team and the pilot organizations for their tireless efforts in implementing the project (a full list of team members can be found [here](#)). We would also like to acknowledge the Harm Reduction Services team at the British Columbia Centre for Disease Control for their support with this project. We are indebted to the peer workers across the province who are dedicated to being in the frontline to save lives from drug overdoses during the ongoing dual public health emergencies in BC.

References

1. Bardwell G, Kerr T, Boyd J, McNeil R. Characterizing peer roles in an overdose crisis: Preferences for peer workers in overdose response programs in emergency shelters. *Drug Alcohol Depend* [Internet]. Elsevier Ireland Ltd; 2018 [cited 2020 Apr 21];190:6–8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/29960202>.
2. Greer A, Luchenski S, Amlani A, Lacroix K, Burmeister C, Buxton J. Peer engagement in harm reduction strategies and services: A critical case study and evaluation framework from British Columbia, Canada. *BMC Public Health* [Internet]. 2016 [cited 2020 Jan 3];16:1. Available from: <https://doi.org/10.1186/s12889-016-3136-4>.
3. Kennedy MC, Boyd J, Mayer S, Collins A, Kerr T, McNeil R. Peer worker involvement in low-threshold supervised consumption facilities in the context of an overdose epidemic in Vancouver, Canada. *Soc Sci Med*. 225: Elsevier Ltd; 2019. pp. 60–8.

4. Law M. Peer support workers in Quesnel work to reduce overdose deaths in the north. Quesnel Cariboo Obs [Internet]. Quesnel Cariboo Observer; 2018; Available from: <https://www.quesnelobserver.com/news/peer-support-workers-in-quesnel-work-to-reduce-overdose-deaths-in-the-north/>.
5. Mamdani Z, Mckenzie S, Pauly B (Bernie), Cameron F, Conway-Brown J, Edwards D et al "Running myself ragged": Stressors Faced by Peer Workers in Overdose Response Settings. Harm Reduct J [Internet]. 2021 [cited 2021 Feb 17];18. Available from: <https://harmreductionjournal.biomedcentral.com/articles/10.1186/s12954-020-00449-1>.
6. Smart A. Peer Support workers on front lines of the OD crisis need support too: Experts [Internet]. National Post; 2018. Available from: <https://nationalpost.com/pmnl/news-pmnl/canada-news-pmnl/peer-support-workers-on-front-lines-of-the-od-crisis-need-support-too-experts>.
7. Olding M, Boyd J, Kerr T, McNeil R. "And we just have to keep going": Task shifting and the production of burnout among overdose response workers with lived experience. Soc Sci Med [Internet]. Soc Sci Med; 2021 [cited 2021 Aug 19];270. Available from: <https://pubmed.ncbi.nlm.nih.gov/33418149/>.
8. BC Coroners Service. Illicit Drug Toxicity Deaths in BC - January 1, 2011 to May 31, 2021 [Internet]. 2021. Available from: <https://www2.gov.bc.ca/assets/gov/birth-adoption-death-marriage-and-divorce/deaths/coroners-service/statistical/illicit-drug.pdf>.
9. Belzak L, Halverson J. The opioid crisis in Canada: a national perspective. Heal Promot chronic Dis Prev Canada [Internet]. Health Promot Chronic Dis Prev Can; 2018 [cited 2021 Aug 19];38:224–33. Available from: <https://pubmed.ncbi.nlm.nih.gov/29911818/>.
10. Kimber J, Hickman M, Strang J, Thomas K, Hutchinson S. Rising opioid-related deaths in England and Scotland must be recognised as a public health crisis. The Lancet Psychiatry. Elsevier Ltd; 2019. p. 639–40.
11. Rudd RA, Aleshire N, Zibbell JE, Matthew Gladden R. Increases in drug and opioid overdose deaths – United States, 2000–2014. Morb Mortal Wkly Rep Department of Health Human Services. 2016;64:1378–82.
12. Special Advisory Committee on the Epidemic of Opioid Overdoses. Opioid- and Stimulant-related Harms in Canada - Public Health Infobase | Public Health Agency of Canada [Internet]. 2021 [cited 2021 Aug 20]. Available from: <https://health-infobase.canada.ca/substance-related-harms/opioids-stimulants/>.
13. Adams RE, Boscarino JA, Figley CR. Compassion Fatigue and Psychological Distress Among Social Workers: A Validation Study. Am J Orthopsychiatry [Internet]. NIH Public Access; 2006 [cited 2021 Aug 19];76:103. Available from: </pmc/articles/PMC2699394/>.
14. Cocker F, Joss N. Compassion fatigue among healthcare, emergency and community service workers: A systematic review [Internet]. Int. J. Environ. Res. Public Health. Multidisciplinary Digital Publishing Institute (MDPI); 2016 [cited 2021 Aug 19]. p. 1–18. Available from: </pmc/articles/PMC4924075/>.
15. Figley C. Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized. - PsycNET. 1995 [cited 2021 Aug 19]; Available from: <https://psycnet.apa.org/record/1995-97891-000>.
16. Conrad D, Kellar-Guenther Y. Compassion fatigue, burnout, and compassion satisfaction among Colorado child protection workers. Child Abuse Negl [Internet]. Child Abuse Negl; 2006 [cited 2021 Aug 19];30:1071–80. Available from: <https://pubmed.ncbi.nlm.nih.gov/17014908/>.
17. Hunsaker S, Chen H-C, Maughan D, Heaston S. Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. J Nurs Scholarsh [Internet]. J Nurs Scholarsh; 2015 [cited 2021 Aug 19];47:186–94. Available from: <https://pubmed.ncbi.nlm.nih.gov/25644276/>.
18. Figley CR. Treating compassion fatigue. APA PsychNet [Internet]. 2002 [cited 2021 Aug 19]; Available from: <https://psycnet.apa.org/record/2002-17425-000>.
19. Pearlman LA, Saakvitne KW. Trauma and the therapist: Countertransference and vicarious traumatization in psychotherapy with incest survivors. - PsycNET. 1995 [cited 2021 Aug 19]; Available from: <https://psycnet.apa.org/record/1995-97990-000>.
20. Ray SL, Wong C, White D, Heaslip K. Compassion Satisfaction C, Fatigue, Work Life Conditions, and Burnout Among Frontline Mental Health Care Professionals: <http://dx.doi.org/10.1177/1534765612471144> [Internet]. SAGE PublicationsSage CA: Los Angeles, CA; 2013 [cited 2021 Aug 19];19:255–67. Available from: <https://journals.sagepub.com/doi/full/10.1177/1534765612471144>.
21. Nicola C, Grayson C, Christina H, Lauren D, Kirsten F, Juliet RG, et al. Compassion fatigue in healthcare providers: A systematic review and meta-analysis. Nurs Ethics [Internet]. Nurs Ethics; 2020 [cited 2021 Sep 16];27:639–65. Available from: <https://pubmed.ncbi.nlm.nih.gov/31829113/>.
22. The Florida Center for Public Health Preparedness. Understanding Compassion Fatigue: Helping Public Health Professionals and Other Front-Line Responders Combat the Occupational Stressors and Psychological Injuries of Bioterrorism Defense for a Strengthened Public Health Response [Internet]. 2004. Available from: .
23. Maslach C. Understanding burnout: Definitional issues in analyzing a complex phenomenon. Job Stress Burn Res Theory Interv Perspect [Internet]. Sage Publications; 1982 [cited 2021 Sep 16]. p. 29–40. Available from: https://www.researchgate.net/publication/240370761_Understanding_burnout_Definitional_issues_in_analyzing_a_complex_phenomenon.

24. Ruiz-Fernández MD, Ramos-Pichardo JD, Ibáñez-Masero O, Cabrera-Troya J, Carmona-Rega MI, Ortega-Galán AM. Compassion fatigue, burnout, compassion satisfaction and perceived stress in healthcare professionals during the COVID-19 health crisis in Spain. *J Clin Nurs* [Internet]. *J Clin Nurs*; 2020 [cited 2021 Aug 17];29:4321–30. Available from: <https://pubmed.ncbi.nlm.nih.gov/32860287/>.
25. Stamm BH. *The Concise ProQOL Manual, 2nd Edition* [Internet]. 2010. Available from: www.proqol.org.
26. Gustafsson T, Hemberg J. Compassion fatigue as bruises in the soul: A qualitative study on nurses: <https://doi.org/10.1177/09697330211003215> [Internet]. SAGE PublicationsSage UK: London, England; 2021 [cited 2021 Aug 17]; Available from: <https://journals.sagepub.com/doi/full/10.1177/09697330211003215>.
27. Winstanley EL. The Bell Tolls for Thee & Thine: Compassion Fatigue & the Overdose Epidemic. *Int J Drug Policy* [Internet]. *Int J Drug Policy*; 2020 [cited 2021 Aug 19];85. Available from: <https://pubmed.ncbi.nlm.nih.gov/32499119/>.
28. Shepard BC. Between harm reduction, loss and wellness: on the occupational hazards of work. *Harm Reduct J* [Internet]. 2013 [cited 2020 Jan 3];10:5. Available from: <http://harmreductionjournal.biomedcentral.com/articles/10.1186/1477-7517-10-5>.
29. Declaire C. On the front line of a crisis, overdose-prevention staff could use some help. *CBC News* [Internet]. 2018 [cited 2020 Jan 3]; Available from: <https://www.cbc.ca/news/health/overdose-prevention-sites-mental-health-frontline-workers-1.4893867>.
30. Teti M, Bowleg L, Spencer S. Who Helps the Helpers? A Clinical Supervision Strategy to Support Peers and Health Educators Who Deliver Sexual Risk Reduction Interventions to Women Living With HIV/AIDS. *J HIV AIDS Soc Serv*. 2009;8.
31. Wagner KD, Davidson PJ, Iverson E, Washburn R, Burke E, Kral AH, et al. "I felt like a superhero": The experience of responding to drug overdose among individuals trained in overdose prevention. *Int J Drug Policy* [Internet]. 2013;25:1. Available from: <https://doi.org/10.1016/j.drugpo.2013.07.003>.
32. Bardwell G, Anderson S, Richardson L, Bird L, Lampkin H, Small W, et al. The perspectives of structurally vulnerable people who use drugs on volunteer stipends and work experiences provided through a drug user organization: Opportunities and limitations. *Int J Drug Policy* [Internet]. Elsevier B.V.; 2018 [cited 2020 Apr 21];55:40–6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/29501928>.
33. Solid Outreach. Solid Outreach [Internet]. 2020 [cited 2020 Jul 21]. Available from: <https://solidvictoria.org/>.
34. RainCity Housing. RainCity Housing [Internet]. 2020 [cited 2020 Jul 21]. Available from: <https://www.raincityhousing.org/#>.
35. Stamm BH. Professional Quality of Life Scale (PROQOL) [Internet]. 2009. Available from: https://img1.wsimg.com/blobby/go/dfc1e1a0-a1db-4456-9391-18746725179b/downloads/ProQOL_5_English_Self-Score.pdf?ver=1622777390411.
36. The R, Foundation R. The R Project for Statistical Computing [Internet]. 2020 [cited 2020 Aug 4]. Available from: <https://www.r-project.org/>.
37. <https://linkinghub.elsevier.com/retrieve/pii/S0955395920303534>.
38. Sharma N, Chakrabarti S, Grover S. Gender differences in caregiving among family - caregivers of people with mental illnesses. *World J Psychiatry* [Internet]. Baishideng Publishing Group Inc; 2016 [cited 2021 Sep 17];6:7. Available from: [/pmc/articles/PMC4804270/](http://www.ncbi.nlm.nih.gov/pubmed/27444270).
39. 39.
40. Heritage B, Rees CS, Hegney DG. The ProQOL-21: A revised version of the Professional Quality of Life (ProQOL) scale based on Rasch analysis. *PLoS One* [Internet]. Public Library of Science; 2018 [cited 2021 Aug 20];13:e0193478. Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0193478>.
41. Xie W, Chen L, Feng F, Okoli CTC, Tang P, Zeng L, et al. The prevalence of compassion satisfaction and compassion fatigue among nurses: A systematic review and meta-analysis. *Int J Nurs Stud Pergamon*. 2021;120:103973.
42. Hooper C, Craig J, Janvrin DR, Wetsel MA, Reimels E. Compassion Satisfaction, Burnout, and Compassion Fatigue Among Emergency Nurses Compared With Nurses in Other Selected Inpatient Specialties. *J Emerg Nurs Mosby*. 2010;36:420–7.
43. Keidel GC. Burnout and compassion fatigue among hospice caregivers. *Am J Hosp Palliat Care* [Internet]. Sage PublicationsSage CA: Thousand Oaks, CA; 2002 [cited 2020 May 1];19:200–5. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/12026044>.
44. Alharbi J, Jackson D, Usher K. The potential for COVID-19 to contribute to compassion fatigue in critical care nurses. *J Clin Nurs* [Internet]. Wiley-Blackwell; 2020 [cited 2021 Aug 17];29:pp. 2762–4. Available from: [/pmc/articles/PMC7267232/](http://www.ncbi.nlm.nih.gov/pubmed/32860287).
45. Johnson L. "We're starving for it": Paramedics get new resiliency training due to overdose crisis | *CBC News*. 2017 [cited 2020 Jan 3]; Available from: <https://www.cbc.ca/news/canada/british-columbia/first-responders-overdose-trauma-stress-1.4115497>.
46. Joint Task Force on Overdose Prevention and Response. Progress Update on B.C.'s Response to the Opioid Overdose Public Health Emergency [Internet]. 2017. Available from: <https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/overdose-response-progress-update-march2017.pdf>.
47. Greer A, Bungay V, Pauly B, Buxton J. 'Peer' work as precarious: A qualitative study of work conditions and experiences of people who use drugs engaged in harm reduction work. *Int J Drug Policy* [Internet]. Elsevier; 2020;85:102922. Available from: <https://doi.org/10.1016/j.drugpo.2020.102922>.

48. Nolte AG, Downing C, Temane A, Hastings-Tolsma M. Compassion fatigue in nurses: A metasynthesis. *J Clin Nurs* [Internet]. John Wiley & Sons, Ltd; 2017 [cited 2021 Aug 20];26:4364–78. Available from: <https://onlinelibrary.wiley.com/doi/full/10.1111/jocn.13766>.
49. Hezezi JA. Evaluation of a Meditation Intervention to Reduce the Effects of Stressors Associated With Compassion Fatigue Among Nurses: <https://doi.org/10.1177/0898010115615981> [Internet]. SAGE PublicationsSage CA: Los Angeles, CA; 2015 [cited 2021 Aug 20];34:343–50. Available from: <https://journals.sagepub.com/doi/abs/10.1177/0898010115615981>.
50. Steinheiser M. Compassion fatigue among nurses in skilled nursing facilities: Discoveries and challenges of a conceptual model in research. *Appl Nurs Res WB Saunders*. 2018;44:97–9.
51. Greer A, Buxton J. A guide for paying peer research assistants: Challenges and opportunities (version 2). [Internet]. BC Centre for Disease Control; 2018. Available from: [http://www.bccdc.ca/resource-gallery/Documents/Educational Materials/Epid/Other/peer_PEEP_payment_2018.pdf](http://www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/Epid/Other/peer_PEEP_payment_2018.pdf).
52. Alkema K, Linton JM, Davies R. A Study of the Relationship Between Self-Care, Compassion Satisfaction, Compassion Fatigue, and Burnout Among Hospice Professionals. <http://dx.doi.org/10.1080/15524250802353934> [Internet]. Taylor & Francis Group; 2008 [cited 2021 Aug 20];4:101–19. Available from: <https://www.tandfonline.com/doi/abs/10.1080/15524250802353934>.
53. Geoffrion S, Lamothe J, Morizot J, Giguère C-E. Construct Validity of the Professional Quality of Life (ProQoL) Scale in a Sample of Child Protection Workers. *J Trauma Stress* [Internet]. *J Trauma Stress*; 2019 [cited 2021 Aug 19];32:566–76. Available from: <https://pubmed.ncbi.nlm.nih.gov/31265178/>.

Supplementary

Appendix 1 is not available with this version