

Staff Exposure to Trauma and the Impact of Trauma-Informed Care

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Abstract

Background: Working with client populations who experience high levels of traumatic stress can result in direct traumatization of staff. This in turn often results in high levels of sick leave, stress leave, employee absenteeism and staff turnover. The extent to which staff stress may be mitigated by the presence of a culture of trauma informed care (TIC) has not previously received attention. This study reports on the extent to which staff report traumatizing experiences as part of their job, related traumatic stress and a causal analysis that suggests the potential impact of a TIC environment on mitigating these difficult emotional experiences.

Methods: The study surveyed 321 frontline workers in 27 programs within 19 organizations that provide intervention and support services to persons experiencing homelessness. The survey included the PROQoL, LEC-5 and the PCL-6, and a set of questions on organizational functioning. Statistical analysis included examination of the correlation of traumatic stress, secondary traumatic stress, burnout, and organizational factors of trauma informed care. We conducted a mediation analysis using the framework proposed by Hayes [1] to examine the role of organizational environment on staff traumatic stress.

Results: The study affirms the high rates of traumatic experiences and the high rate of stress reported by frontline workers. The mediation analysis establishes model that shows a direct link between trauma-informed organizational practices and reduction in staff reported traumatic stress symptoms.

Conclusions: Previous studies have concentrated on secondary traumatic stress. This research highlights that high rates of direct traumatic stress on frontline workers and demonstrates a potential pathway of stress reduction in organizations that have a trauma-informed environment.

Background

In the last few years, those who work in mental health services, and many in ancillary professions, have come to recognize that traumatic experiences are pervasive and eventually impact most people. A plethora of work has addressed this prevalence in the general population, estimated to range from 80 % to 90% [2, 3], with many people reporting multiple events. In specific client groups, such as those receiving social and child welfare services, mental health counselling and housing the incidence of trauma has been widely documented [4, 5, 6]. Additionally, high rates of traumatic experiences are also reported among the millions who report experiences with homelessness [4, 7, 8].

While traumatic exposure has been widely documented in the client population, and a recent report documents high rates of traumatic stress in frontline staff [8], almost nothing is known about the how

often frontline staff are exposed to job-related trauma, the extent to which this is compounded by their personal histories of trauma, and the degree to which direct traumatic stress is directly measured and differentiated from vicarious traumatization (VC). It is important to distinguish direct traumatic stress from (VC). While numerous studies have examined VC [9], the direct traumatic stress of long term, frequent and ongoing involvement and work with individuals whose lives are fraught with both simple (one event) and complex (multiple developmental experiences) trauma has not previously been subject to empirical study.

Several researchers have noted that research on the impact of traumatic experiences on staff has been limited to convenience sampling and internet surveys and required more rigorous population-wide data [[9, 10]. A population- wide study found traumatic symptoms in frontline workers a pervasive problem in organizations that serve persons experiencing homelessness, with reported rates indicating a potential PTSD diagnosis of 33% to 36% (Authors, 2019). While the work by Authors (2019) needs validations across other geographies, it concurs with field reports of high rates of staff stress and reports by others [6,7].

Additionally, while there has recently been an upsurge of research on trauma-informed care, and considerable discussion on implementing trauma-based practices, there is little evidence about what organizational factors may influence and mitigate traumatic impacts on staff [6]. Interventions that seek to mitigate the impact of traumatic stress on staff have focused on emergency services personnel and mental health clinicians and often address the impacts only of major events that affect numerous people simultaneously [11,12]. While there is growing awareness of the importance of trauma-informed care, little is understood about how this approach may impact staff and influence their experiences with job-related traumatic stress [13, 14]. Additionally, in a time when the implementation of trauma-informed care (TIC) has become ubiquitous in mental health settings, there is a dearth of information whether the presence of a TIC environment impacts the traumatic stress experienced by frontline staff who are mired in the trenches of working with traumatized clients. In this report we present further evidence of the prevalence of traumatic stress in frontline workers, the extent to which traumatic events occur to staff in the workplace, and the impact that trauma-informed organizations may have on mitigating this stress.

It is apparent from an examination of the literature on trauma and trauma informed care (TIC), that research in this field has grown exponentially in the last few years [15], but most of it has been focused on investigating the prevalence and mitigating factors of trauma for service recipients [16] and not staff. Other work has been directed at examining the implementation of training in trauma-informed care [5, 17]. As this field of studies is still comparatively young, several important gaps exist in the knowledge base. Little is known about the extent to which staff are impacted by prior traumatic experiences when continually faced with interactions with clients who themselves are highly traumatized. There is also a paucity of evidence of the impact of TIC on employees in human services organizations, especially those who work with society's most vulnerable people [8].

Most studies on staff experiences focus on vicarious traumatization (VC) and secondary traumatic stress (STS), and this has produced many reports that document elevated levels of stress responses among different helping professionals: social workers, nurses, mental health professionals, child welfare and youth workers [18]. Research on workplace related PTSD has primarily examined mental health counsellors, nurses, and emergency responders [19]. In these studies the incidence of symptoms indicating a PTSD diagnosis ranged from social workers at 22.5% [20] to mental health nurses at 14%, and 17% [21] and ranged across all groups from 7% to 44% [22]. Differing methodologies may account for a substantial portion of this range of prevalence and most often, these studies connected traumatic stress symptoms with identifiable, specific, major work-related incidents rather than a wider range of traumatic experiences which most staff in the homeless sector encounter. More recently, one study reported on both direct experiences of traumatic symptoms as well as VC in a substantial cohort of frontline workers in multiple homeless serving organizations and found rates of PTSD symptoms, at 33%, to be considerably higher than for social workers, nurses and emergency medical technicians [8].

Despite the number of studies that document work related traumatic stress, none report on staff members' prior histories of traumatic events. Thus reports on the incidence of traumatic symptoms in staff may fail to acknowledge that the workplace alone may not be responsible for the emergence of PTSD. The field of traumatology recognizes that while a single event may precipitate PTSD in some people, in others there may be two or more events that act as catalysts to traumatic symptoms. For others, while there may be no new traumatic event, workplace dynamics, especially in chaotic environments such as shelters for homeless people, may act as triggers to reactivate prior traumatic stress responses or to activate a delayed response. There are several ways in which PTSD symptoms may arise in staff working with homeless and vulnerable people:

- Experiencing, witnessing or repeatedly hearing about seriously stressful events in the workplace
- Cumulative personal stress that may be exacerbated by workplace trauma
- Workplace events that trigger traumatic responses in people with prior traumatic histories
- Delayed onset of traumatic stress not previously expressed
- A combination of two or more of the above dynamics

While sorting out the primary and secondary causative factors may prove to be difficult or even impossible, especially in studies that are focussed on prevalence and incidence, it would be unwise to attribute experiences of traumatic stress in the workplace exclusively to present or prior events.

As we acknowledge high rates of traumatic stress in staff, we also need to examine the possible role that trauma-informed care (TIC) could have in mitigating these experiences. Currently, while there is no uniform definition of trauma-informed care at either an individual or organizational level [9], a consensus of experts align with a report by the Substance and Mental Health Services Administration (SAMSHA) that describes TIC as a guiding set of principles and practices that guide both individual interventions and organizational policies, protocols and procedures [23]. TIC does not address the treatment of trauma by clinicians, rather it provides a culture that embraces traumatic responses as natural outcomes of

extreme experiences, and promotes responses that do not pathologize or exacerbate client and staff reactions. Founded on an understanding of the biological, neurological and psychosocial impacts of traumatic experiences and their influence on human behaviour and emotion [24], TIC promotes a set of guidelines for the delivery of services by both individual clinicians, human services workers and their organizations. These guidelines work to assure the impact of trauma frames the rationale and procedures for universal inclusion of individual psychological and physical safety, empowerment, choice, mutual trust and respect [4, 23, 25], both for clients and all members of the organization.

Research on effective interventions that address the sequelae of trauma is now abundant [23, 26], but understanding of the impact of TIC on a variety of outcomes such as client engagement, staff well-being, organizational stability including rates of stress leave and staff turnover, is far less well-developed [6]. The effects of TIC on client outcomes has received attention in child welfare services, as well as mental health and substance abuse services and a number of articles have reported a range of interventions; including outcome reports on the effects of providing trauma informed training in relation to the use of assessment tools and on the effects of trauma symptom identification in case planning [27].

In the field of child welfare, Kerns et al. [28] reported that TIC training improves staff awareness and increases skills and competencies of staff in assessing for indications of trauma. In a similar vein, Fraser and colleagues [29] described an initiative by the Massachusetts Child Trauma Project to provide a three-pronged approach to training child welfare staff, dissemination of evidence –based interventions in trauma care, and implementing trauma-informed child welfare leadership teams across the state. A subsequent report of this initiative by Bartlett et al [30] indicated that trauma-informed leadership teams were key in the implementation of TIC in individual organizational units, and evidence-based learning collaboratives were associated with trauma informed agency and individual practices. Furthermore, practices in TIC resulted in a reduction in post-traumatic symptoms and behavioral problems in children served in these agencies. Changes in self-reported practices and perception by staff as a result of training in TIC in child welfare agencies in New Hampshire was also the focus of a study by Jankowski et al. [31] wherein the staff and supervisors of child welfare agencies were involved in a multimodal training that included sessions spanning several months. Results were mixed as some organizational units were unable to maintain changes. Low response rates, and high rates of missing data across ten organizational sites limits generalization of these results. These response rates also make it impossible to assess if organizational rather than individual factors may influence the adoption and utilization of TIC practices. When TIC training was introduced as part of services to foster care staff, a pilot study reported fewer child placement disruptions and fewer foster home closures when resource parents were trained in TIC [30].

Another study that evaluated the results of TIC training looked at improvements in knowledge and attitudes of providers from a number of different organizations participating in the same TIC training and found measurable positive changes as a result of this intervention [32]. However, changes were not measured over time and thus it is not possible to determine if this cross-sectional approach has greater impact and retention than single agency trainings. A review of the interventions that report on trauma-

informed trainings concluded that most reports were limited by their use of single group, pre and post-test designs, inconsistent use of assessment materials and limited analytic designs [17]. While there will always be critiques of research studies, as none are perfect, the inability to determine the type of training design, focus of type of staff (clinical, supervisory and administrative), number and length of training sessions and organizational impact of these efforts, hampers implementation of effective practices and thus requires more substantive understanding.

An examination of the literature on organizational aspects of TIC, including impact on staff, produced limited empirical work and concurs with other reports on the need for empirical evidence [6]. Improvement in staff satisfaction along several dimensions after their implementation of a TIC approach was measured in a substance abuse and mental health services agency [33]. Modest improvements in worker connection with the workplace and alignment with agency aims were found, along with improvements in management understanding of direct service staff and program needs as well as management care, concern and encouragement of new ideas. Staff satisfaction was further explored in the substance abuse treatment field, [26, 34] in studies of the impact on both organizational factors and client outcomes of introducing TIC. Results indicate that TIC had a large effect on organizational climate and procedures as well as both staff and client satisfaction. Furthermore, planned discharges, increased, signalling a more positive client outcome. One limitation to the generalizability of this work is the response rate (69% - 71%) and limitation to one organization.

Lack of adequate response rates is frequently mentioned as a challenge to generalizability and applicability of results. Staff experiences of the implementation of TIC in a range of social services organizations [25] found support for the trauma informed components of safety, trust, choice, collaboration and empowerment originally proposed by Falloot and Harris [24]. However, these findings were limited by a low response rate (15% organizations contacted), missing data in significant number of returned surveys, and, the lack of sufficient respondents in each organization (an average of 3 per organization) to make meaningful comparisons. Despite the proliferation of discussion about TIC principles, and efforts to describe and provide training on implementation, [35], there is consensus among researchers that there is a paucity of research on the impact on staff or organizations as a result of implementing TIC [6, 17, 25, 26].

There is little evidence of impacts on staff, despite the recognition that staff attitudes, feelings and behaviours have a marked impact on services delivery in a variety of settings. With these considerations in mind, and given this gap in research, we moved forward with following goals:

1. Documenting the extent of traumatic stress symptoms experienced by frontlines staff in agencies serving people experiencing homelessness
2. Gaining a stronger understanding of the organizational supports and stressors facing this staff population
3. Determining the extent to which employment related traumatic experiences are correlated with reported traumatic stress and;

4. Examining the extent to which individual and organization awareness of TIC may impact levels of staff reported traumatic stress

Method

In the city of Calgary, one umbrella organization exists that develops policy, administers funding and coordinates services for homeless serving agencies. This organization stands as a connection for all agencies providing support to individuals in Calgary experiencing homelessness. Through this organization researchers are provided a convenient and effective point of access to agencies that provide programs in housing, intervention and support. With this coordinated access, these agencies were contacted and their support and participation was enlisted. This resulted in 19 of 24 existing organizations, representing 27 programs agreeing to participate. The research team provided study information, including a copy of the survey, to senior management, and management provided advanced notice to staff of the time and opportunity to participate in the study (without the survey items). With this introduction, researchers arranged meetings with staff during regularly scheduled staff meetings at which time the study was explained and surveys distributed. Staff was provided time during the staff meeting to retire to a private place to complete surveys, which were then returned, regardless of completion, in an unmarked, sealed envelope. This approach had several advantages: 1] it allowed for the least staff burden because they did not have to find additional time for survey completion; 2] participants could decline (return blank copies) and; 3] it facilitated rapid response and a very high response rate. Overall, 9 surveys (less than 3% of the total) were not completed. This signified that some staff did exercise a choice not to participate. We explain this approach as unlike other studies we had high rate of participation as greater than 85% attended the staff meetings. We also had only one wave of data collection and thus minimized any possible response influence among peers who completed the survey. The study was approved by the University of Calgary Conjoint Faculties Ethics Board.

The survey incorporated three well-established instruments, the PCL-C (Wilkins, Lang, & Norman, 2011) which assesses PTSD symptoms, the PROQoL [37], which measures compassion satisfaction, compassion fatigue, and burnout and the LEC-5. The PCL-C, (PTSD Check List), is used to assess PTSD symptoms in military and civilian populations [36]. A short, six item version has been found to have strong sensitivity (.92) and specificity (.72) [36], and can be used as a reliable screen for traumatic stress and potential PTSD. The PCL- 6 short version was chosen because of its strong psychometric properties, relevance to a civilian population and a reduced burden of administration. The PROQoL, widely used to assess the quality of professional life of people who work with those experiencing extremely stressful events [37], consists of 30 variables (5 point Likert scale) on three scales: compassion satisfaction, compassion fatigue and burnout. It has strong construct validity and scales have internal validity and consistency (compassion satisfaction.87, compassion fatigue.80, and burnout.72) [38]. The Life Events Checklist for DSM-5 (LEC-5) is also a self-report measure screens for life-time events that may contribute to PTSD [39] and examines 17 different types of events that are associated with the development of traumatic stress symptoms both on the job and outside of work experiences. In addition to these measures, the survey included basic demographic questions, items about various aspects of

organizational function, culture and climate, inquired about the extent of TIC knowledge as well as staff perception of the extent of TIC operating practices within the organization and a set of question about how staff attempt to cope with stressful work-related experiences.

Completion rates of the instruments varied with 98% completing the PCL, 94% completing all of the items in the PProQoL and 79% completing the LEC-5. The only item that had significant missing responses was the one asking about a person's role in the workplace, where fully one third were missing responses. This probably indicates concern that participants had over being identified, as we found incidental to survey administration, that concerns regarding anonymity were frequently mentioned by staff. Response fatigue was not responsible for the missing data as a final section that asked about coping mechanisms had a 98% response rate.

Results

The Respondents

Of the 321 surveys returned, 9 were not completed, leaving 312, (97% completion rate). Over 74% identified as female, which is representative of the gender identification of the social services work force. Participants ranged in age from 18 to over 60, with 35% in the age range 30-39 and 53% in 30-49 years old. Nearly 62% had been employed in their current position for less than two years and 31% had been employed in the homeless sector for less than two years. One third have two or less years of experience and 71% of the staff surveyed reported less than five years' experience in homeless services. Reports that people move from one organization in this sector to the other are supported by feedback that half of all respondents had worked for more than one organization serving persons with lived experiences of homelessness. Those in their 30's were more likely than other age groups to have worked in two or more organizations serving people re-experiencing homelessness.

Over a third (36.7%) had a two-year college-level of education and 43.6% had a university degree, which is somewhat higher than the 37% reported for direct shelter staff [8]. Of those with a university degree, 27% reported social work as their area of concentration and 14% psychology, with the rest indicating a wide range of fields of study outside of the helping professions. Only eight people reported a degree in addictions counselling as part of their education. As addictions are a prevalent issue for many clients, this lack of work force preparation is of considerable concern. Thus, the overall workforce in the homeless sector is minimally prepared in psychosocial, behavioral and addictions issues vital for those working with a difficult client population that has complex needs.

The 19 organizations for which participants worked included those with single and multiple programs serving individuals, families, youth, and specialized programs for men and women: 32% worked in shelters, 34% in permanent housing, 14% in transitional housing, 29% provided supports and a small cohort provided residential treatment. Respondents reported a variety of primary roles, ranging from intake worker to case manager and shelter staff. However, 39% reported other additional roles, suggesting multiple job demands, and described as 44 different job titles that were most often a variant of one of the

major categories, such as counsellor, and support worker, reflecting the lack of job consistency and role clarity across the sector.

The Instruments

The psychometric properties of each instrument were validated against established norms to ensure that the results fell in line with those reported in other studies. The PROQoL scale alphas (Cronbach's), were .74 on the burnout scale, .83 on the STS scale, and .88 on the compassion satisfaction scale. These concur with norms reported in other studies [37]; [38]. The PCL, had a Cronbach's alpha of .84, and these results support those reported in the literature [36].

The PROQoL scores indicated average levels of burnout and STS, as described by Stamm [37] in over 50% of respondents. However, 24% of staff reported high levels of burnout and 21% high levels of STS indicative of the need to step back from present work duties and consider professional counselling supports [37]. In contrast, the PCL is associated with symptoms leading to a PTSD diagnosis and a score of 14 or greater is considered indicative of PTSD [36]. As there is no DSM diagnostic category associated with burnout or STS, the average and high scores on burnout and STS scales represent the percent of respondents in each quadrille, and not do necessarily reflect the extent of their dysfunction or distress. Thus the PROQoL scales cannot be compared directly with PCL scores.

Throughout this report we refer to symptoms rather than a diagnosis because the PCL is a screen and not a diagnostic instrument and does not measure distress or impairment, which are two diagnostic criteria. However, it succinctly detects the main symptoms of avoidance, intrusion and arousal associated with PTSD. In this cohort, over 41 % of respondents (response rate 98% of 312 participants) reported PTSD symptoms that would potentially lead to a diagnosis. Under-reporting of traumatic symptoms is recognized as contributing to lower reported incidence of distress [40] Including respondents on the cusp, with a score of 13, adds another 9.7%, which raises the proportion of staff impacted by traumatic stress to 51%.

Results of the LEC-5 indicated that over 98% of all respondents report experiencing or witnessing at least one traumatic incident in their lives, and of those, 95% report experiencing the event themselves. This is considerably higher than other reports [2, 41]. In addition, 88% have experienced three or more traumatic events and 25% have witnessed or experienced 11 or more events. Furthermore, 58% report that at least some of these events were "part of their job". These rates for on the job exposure are conservative and may be an under-report of true incidence, as 20% of participants did not complete the LEC - 5. It is quite possible that many non-respondents may have wanted to avoid any issues that could act as "triggers" for traumatic reminders. What we do know from these results is that there is a very large cohort of workers who are impaired by serious symptoms of PTSD, who continue to work daily with a traumatized client population. The correlation of adverse life events with traumatic symptoms, both total and job-related, shows a significant but modest association, as seen in Table 1.

As the LEC - 5 does not include questions about adverse childhood experiences, the modest correlations may reflect additional influences on PCL scores that are not measured by the present instruments. What is notable is that the total number of events has a stronger correlation than solely job-related events.

In order to understand the role of the organizational environment on staff traumatic stress, we conducted a mediation analysis using the framework proposed by Hayes [1].

Mediation analysis allows for a more intensive examination of variables, beyond descriptives, to provide a functional analysis of the relationships that exist among them. Through a mediation model, one can assess the direct and indirect effects of the independent variable (trauma-informed care in the organization) on the dependent variable (traumatic stress). The use of Hayes' mediation technique has been adopted by other studies that explore the relationships between trauma and psychological constructs [42, 43].

The indirect effects were examined through multiplying the coefficients of the mediators (sense of psychological and physical safety) on predicting the dependent variable, as well as the coefficients of the independent variable on predicting both mediators respectively. Significance of the tests was based on 5000 bootstrap samples with a conventional 95% confidence interval. A nonparametric approach to hypothesis testing and effect size estimation, bootstrapping makes no assumptions about the sampling distributions of the statistics or variables and is thus circumvents problems of power and other abnormalities in the sampling distribution. While the present results did not indicate any abnormal distribution, bootstrapping was implemented as a conservative approach to the analysis. According to Hayes [44], the confidence interval is helpful in rejecting the null hypothesis when the interval estimate does not include zero. The bias-corrected bootstrap confidence interval is argued to be the most widely recommended method for inference about the indirect effect in mediation analysis, and was thus used in this analysis ([44]; [45]). Importantly, two variables were entered in the model as controlled variables: 1) the number of years the participants were employed in homelessness services, and 2) the extent to which they received trauma-informed training. Putting them into the covariate column controls their influences on the overall model. The mediation model and the statistical framework of this study is portrayed in Figure 1.

The fitness of the proposed mediation model was found to be significant, $F(3, 290) = 6.41, p < .001, R^2 = .06$. From the mediation analysis, after entering the controlled variables as covariates, trauma-informed care in the organization was found to be negatively associated with traumatic stress (c-path, $B = -.13, t(293) = -2.21, p < .05$). It was also positively associated with a sense of psychological safety (a-path, $B = .23, t(293) = 7.35, p < .001$), and sense of physical safety (a'-path, $B = .16, t(293) = 3.82, p < .001$), respectively. Furthermore, sense of psychological safety negatively predicted traumatic stress (b-path, $B = -.60, t(293) = 8.23, p < .001$), but sense of physical safety was not significantly related to traumatic stress (b-path, $B = .14, t(293) = 1.67, ns$). As both a- and b-paths were significant, the mediation was tested using bootstrapping method with bias-corrected confidence estimates (Preacher & Hayes, 2004). The 95% confidence interval of the indirect effects was obtained with 5000 bootstrap samples (Hayes, 2013;

Preacher & Hayes, 2004). The results of the mediation analysis confirmed the mediating role of one's sense of psychological safety in the relationship between trauma-informed care in the organization and traumatic stress ($B = -.14$; $CI = -.09$ to $-.22$). The result also indicated a direct effect of trauma-informed care in the organization on traumatic stress to be insignificant (c' -path, $B = -.01$, $t(293) = -.27$, nst), and thus suggested a full mediation (see Figure 2).

The mediation analysis thus showed that trauma-informed care in the organizations had a strong and significant total effect on predicting staff's reduction in traumatic stress; it also revealed a pathway where it was only able to influence traumatic stress via positively affecting staff sense of psychological safety [5]. In addition, staff traumatic stress was negatively and strongly affected by their sense of psychological safety, but not by their sense of physical safety.

Discussion

In a previous study [8], rates of traumatic stress reported by workers in the homeless sector were reported at 33% across two cities. In the current study, 41% of the direct services staff working in a range of 27 programs providing housing and support to people with experiences of homelessness reported PTSD symptoms at rates associated with a diagnosis of PTSD. Another 9.7% fall just below the cut-off and should be considered when accounting for under-reports of symptoms. As the methodology has been the same in the two studies, the increase of rates of reported traumatic symptoms in these two cohorts may be attributable to two related issues. In the earlier study, avoidance and under-reporting may contribute to this incidence. Avoidance is a recognized coping strategy for those experiencing traumatic stress, and the tendency to avoid or attenuate distressing experiences may lead to under assessment of traumatic stress [46]. This avoidance may be the result of psychogenic amnesia or defensive avoidance of material that is painful. Additionally, the first study began with field reports of high rates of burnout and the realization that this was a common mislabelling by staff of their stressful experiences has led to a more specific identification of traumatic stress.

Likewise, the extent to which staff report experiences of being a part of or witnessing a traumatic event aligns with the rates of 90% to 92% reported in a national (U.S.) sample of the general public [3], for people with serious mental illness [47] and youth in residential care [48]. In the present study, over 55% report traumatic events as part of their job, which is an alarmingly high proportion for those not engaged in emergency health, fire and police services. This raises significant concerns about workplace safety and workplace mental health for those who work in the homeless sector. The Mental Health Commission of Canada ([49] identified workplace mental health as a significant occupational concern of national importance. This theme has also been identified by a task force of trauma specialists in the U.S., [9]. Thus, prevalence of work-related traumatic stress assumes a major role in effecting the mental well-being of workers.

The most important finding of the present results lies in the mediation analysis that links symptoms of traumatic stress with trauma-informed care (TIC). While there are a number of attempts to define and

measure TIC, [17]; [6], there is very limited research on the impact of TIC on clients or staff. Morrissey et al. [50] reported on a reduction in traumatic symptoms in women in a co-occurring substance abuse treatment program, although TIC was not specifically measured in the study. More recent work in child welfare services indicates at least a modest benefit to children and families when TIC is implemented [51], but reports of TIC implementation is inconsistent and research outcomes are limited. A study by Hales et al. [26] reported on increased client and staff satisfaction in a TIC environment appears to be the sole report that has quantifiable results based on acceptable methodologies and participation rates.

Our results, based on high participation rates of staff (over 85%) across most eligible organizations (79%), provided a strong basis for a reliable mediation analysis that is not likely to be subject to selection bias. The analysis delineates the path from trauma-informed organizations to a reduction in reported traumatic stress, as mediated by psychological safety. This pathway is also theoretically consistent with what is known about trauma: that the first priority must be a perceived sense of safety, and that psychological safety is of greater importance (relatively) than physical safety. We offer one caveat to this finding. The study was conducted in a metropolitan area that is considered relatively safe with low rates of violent crime. This may well influence the extent to which physical safety was of concern to respondents. While the mediation analysis controlled for training in TIC principles it found that these were less important than organizational level TIC. As a TIC organization is predicated on all staff having TIC training and implementing its basic tenets, this finding implies that the organizational climate will embrace and potentially have a strong determination in staff well-being. This implication is also one that has little documentation in mental health services organizations and may well portend additional efforts to link organizational performance with staff well-being. We caution, however, that a mediation analysis is predictive, and not based on outcomes. However, it establishes a strong foundation for demonstrating the potential impact of TIC on traumatic symptoms in staff and offers a clear research agenda.

There are some limitations to this study that need to be acknowledged. Although we asked a number of questions about the organizational practices which have been identified by others are part of a TIC environment, such as issues of choice, empowerment, trust, support, respect, psychological and physical safety [5], we did not measure all organizational aspects of TIC. Rather, we relied on staff perceptions, which can be considered a barometer of organizational climate and culture but may not reflect a total description of TIC. In this cohort of participants, there were some supervisors and managers, but not sufficient to constitute a separate cohort for data analysis. Thus the voices of senior administrators are not present. As all of our organizations were in one metropolitan area, there is a possibility that local and regional influences may impact how staff perceives their environment but it is doubtful that this would over-inflate reported traumatic stress. Finally, as this study used cross-sectional data any causal claim is guided by the supporting theories and their attendant empirical records, some of which were experimental or longitudinal

Conclusions

The results of this study had several important results. It documented high rates of job exposure to traumatic events in this workforce that deals constantly with highly vulnerable people who have significant histories of trauma, and indicated that the result was greater direct traumatization than vicarious traumatization. It also provides a clear demonstration that when the organizational culture incorporates trauma-informed care there are potentially large effects on reducing staff stress and thus potentially also important secondary effect on clients. Establishing a direct link between trauma-informed organizational practices and reduction in staff reported traumatic stress symptoms is an important association that will hopefully advance the arguments that this approach requires adoption in all human services organizations. While administrators may be reluctant to invest the time, effort, and, financial resources necessary to shift organizational culture and practices to a trauma-informed model, not doing so may put organizations at greater risk for staff well-being, occupational health and safety costs due to short and long-term sick leaves and high turnover rates. We urge implementation studies of trauma-informed care to validate the results of the projections presented.

Abbreviations

DSM: Diagnostic and Statistical Manual of the American Psychiatric Association; LEC–5 The Life Events Checklist for DSM–5; PCL-C: PTSD Check List; PROQoL: Professional Quality of Life; STS: secondary traumatic stress; TIC: Trauma-informed care; VC: vicarious traumatization

Declarations

Authors

All authors have read and approved this manuscript for submissions.

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Competing interests

There are no competing interests in this research for any team member.

Ethics approval and consent to participate

This study was approved by the Conjoint Faculties Research Ethics Board (CFREB) at the University of Calgary. Certificate compliance: REB16-2462_MOD1

Informed consent:

In accordance with CFREB policies, all subjects were provided with an approved informed consent.

Availability of Data and Materials

All data for this research is available, on request, from the principal investigator and primary author, Jeannette Waegemakers Schiff.

Consent to Publish

Not applicable

Consent for publication

We agree to the terms of the BioMed Central Copyright and License Agreement

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Not applicable

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Table 1

Table 1. Correlation of PCL and Life Events

	PCL	events_total	HTM All	POMJ_total
PCL Pearson Correlation	1	.227**	.211**	.160*
Sig. (2-tailed)		.000	.001	.012
N	307	246	254	248

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).

PCL - Post Traumatic Checklist; HTM - happened to me; POMJ - part of my job

Figures

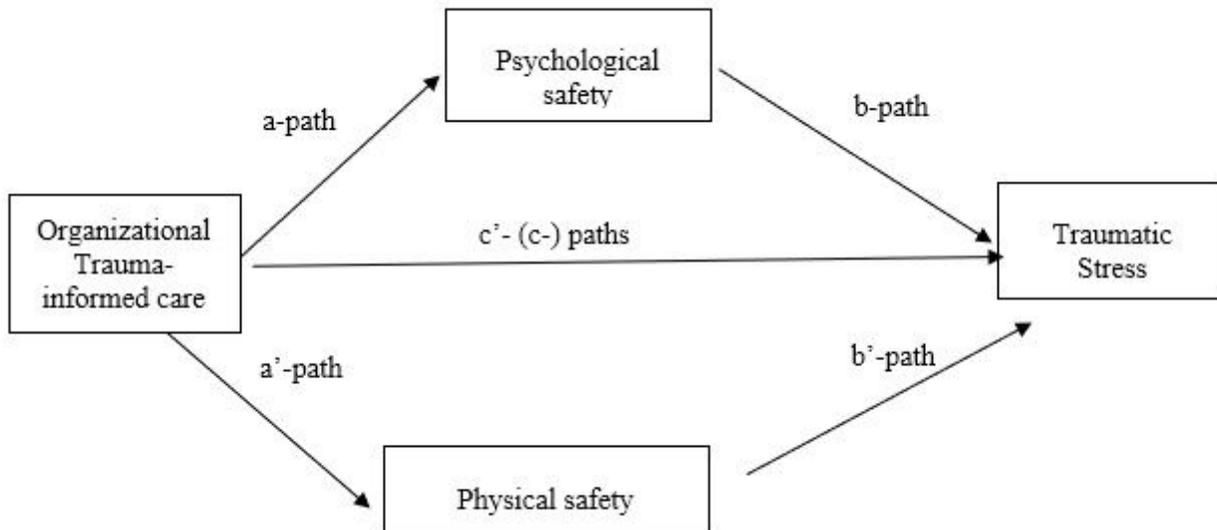
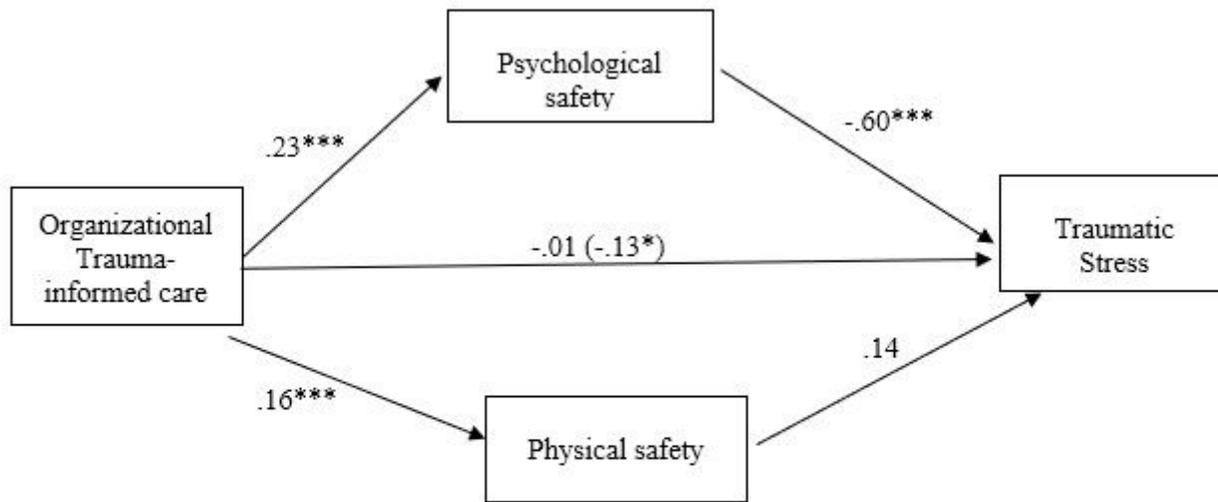


Figure 1

Statistical framework model of a TIC mediation analysis (N = 294)



Note. $*p < 0.05$, $**p < 0.01$, $***p < 0.001$.

Figure 2

TIC mediation model (N = 294)