

[SINDEN]: Identifying the impact of formal and informal critical incident interventions on firefighters' exposure to post-traumatic stress injury in a Northwestern Ontario fire service

Authors: Dr. Kathryn Sinden, School of Kinesiology, Lakehead University, Thunder Bay, Ontario, Canada

Sara Sayed, School of Kinesiology, Lakehead University, Thunder Bay, Ontario, Canada

Regan Bolduc, Thunder Bay Fire Rescue, Thunder Bay, Ontario, Canada

Sandra Dorman, Centre for Research in Occupational Safety and Health, Laurentian University, Sudbury, Ontario, Canada

Priority Research Area: Mental health management

Relevant PSP Population(s): Career firefighters

For more information, please contact: Kathryn E. Sinden - School of Kinesiology, 955 Oliver Road, Thunder Bay, Ontario, Canada, P7B 5E1. kathryn.sinden@lakeheadu.ca. 807-343-8654.

What is the issue? Firefighters are exposed to various factors associated with an increased risk of post-traumatic stress injury (PTSI) including exposure to critical incidents. Critical incident stress debriefing (CISD) is a common strategy used by fire services to manage calls with high critical incident exposure however, recent evidence suggested that CISD may be more harmful than helpful.

Various strategies including Road-to-Mental Readiness, CISD and informal strategies have been implemented as part of the TBFR firefighter mental health management program however, components with perceived effectiveness are unknown.

What was the aim of the study? The foundational research question was: What are the preferred, effective components that should be maintained in the

TBFR / TBPFFA Critical Incident Stress Management program?

The following specific research objectives were developed in response to the overarching research question:

1. To identify the burden of critical event exposures and the incidence of PTSI among Thunder Bay Fire Rescue firefighters.
2. To identify Thunder Bay Fire Rescue firefighters' experiences with Defusing compared to Informal Strategies (i.e., Road to Mental Readiness, informal crew debriefings) following critical incident exposure.
3. To identify the impact of delivering components of the Critical Incident Stress Debriefing (CISD) program, with a specific focus on Defusing on the Thunder Bay Fire Rescue Critical Incident Response Team (CIRT) members.
4. To report on identified current best-practices and outline next steps regarding new resources and/or modification to existing strategies

How was the study conducted? Quantitative data collection included administration of a series of questionnaires that determined critical incident exposure, post-traumatic stress injury risk and

components of the mental health management program that firefighters preferred and accessed following critical incident exposure. Qualitative interviews were conducted to determine impacts of delivering components of the CISD on CIRT members. Follow-up meetings with management and union representation as well, written communications (i.e., infographics) were developed to facilitate communication of initial study findings.

What did the study find? The following are preliminary results:

Thunder Bay Fire Rescue (TBFR) firefighters (n=143) who volunteered to participate in the study had a mean age of 40 years and 11.5 years of service. 91% of TBFR firefighters reported experiencing at least 1 (median = 7) critical incident within the two months prior to data collection (December 2019) and 86% of the same sample reported experiencing symptoms of post-traumatic stress injury. When PTSI risk was stratified, 20% of firefighters reported symptoms that placed them in the moderate to high risk category. 10.6% of our participant sample used formal critical incident stress management resources (i.e., CIRT and defusing) however the majority of firefighters indicated a preference for informal / crew discussions following a critical event exposure. Qualitative analysis is ongoing however emerging themes suggest that CIRT members perceive that the formal CIRT response impacts the natural informal discussions that occur within the crew. Furthermore, CIRT members feel unprepared to respond to many of the individual firefighter distress calls. CIRT members are often called to respond while off duty and this responsibility places a high burden on CIRT members and their families. There was an overwhelming call by CIRT for formal resources to support firefighter mental health.

What are the implications of this study? Evidence-based strategies are required to manage the high exposure and post-traumatic stress injury response among Thunder Bay Fire Rescue firefighters.

Thunder Bay Fire Rescue firefighters appear to prefer informal strategies to manage critical incident exposure; effectiveness compared to formal, evidence-based solutions is warranted.

CIRT implementation would benefit from review and provision of additional mental health supports for CIRT

What are the key messages? Thunder Bay Fire Rescue firefighters experience high critical incident exposures.

Although risk of post-traumatic stress injury is high, this is self-reported and because of the culture among first responders, particularly firefighting, this risk may be higher.

Although some Thunder Bay Fire Rescue firefighters have utilized formal strategies to manage critical incident exposures, there is a preference towards utilizing informal strategies and crew discussions following a difficult call.

Empirical evidence supporting this approach compared to evidence-based approaches for managing mood disorders including post-traumatic stress is required.

Thunder Bay Fire Rescue CIRT members require additional supports, both operational and for their own mental health, if this program is to continue.

Provide a list of potential target audiences for this research: Firefighters, Fire Chiefs, Union, Mental health professionals, Researchers

