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Firefighter preferences regarding post-incident intervention

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The effectiveness of Critical Incident Stress Debriefing (CISD) as a tool remains, at best, inconclusive. Yet in many locales CISD is mandatory for emergency services workers, including firefighters. To our knowledge, to date no study has investigated firefighters' preferences for psychological intervention following traumatic events. To examine this, a survey was conducted with 142 members (54%) of an urban fire and rescue service in south-western Ontario, Canada. Firefighters were provided with five scenarios of varying traumatic intensity, for which they rated desirability of four voluntary post-incident interventions: CISD, individual debriefing, informal discussion, and no intervention. Firefighters expressed interest in working with post-event reactions within their peer group for all events, and an increasing interest in formal intervention as event severity increased. Individual debriefing was preferred to CISD in scenarios of low to moderate intensity. For scenarios of high intensity, ratings for all interventions were high. Expected relationships with prior CISD experience and years of service were not upheld. The essential role of informal peer-support, and the desire for meaningful intervention in severe situations, are discussed.

Keywords: post-incident intervention; PTSD; Critical Incident Stress Debriefing; firefighter; preference; work-related stress

Introduction

The careers of firefighters, as emergency services first responders, are stressful. Over time, firefighters may experience scenes of tragedy, destruction and horror that most people never see in their lifetime (Corneil, Beaton, Murphy, Johnson, & Pike, 1999). Thus emergency services personnel may be at risk of becoming "hidden victims" of the tragedies that they encounter (Regehr & Bober, 2005, p. 68). Some researchers have expressed concern regarding the reactions of emergency personnel to traumatic stressors, and particularly the development of Posttraumatic Stress Disorder (PTSD) (Mitchell & Bray, 1990; Regehr & Bober, 2005). PTSD is a psychiatric ailment thought to develop following a traumatic stressor that threatens a person's life or physical integrity; that invokes a response of fear, helplessness or horror; and is characterized by clinically significant intrusive reminders about the event, avoidance of such reminders, and autonomic hyperarousal (American Psychiatric Association, DSM-IV 2004).

The published prevalence rates of PTSD among firefighters are inconsistent. Haslam and Mallon (2003) reported a 6.5% rate of PTSD in firefighters, similar to the American population base rate of 7.5% (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1996). However, Bryant and Harvey (1995) reported a rate of 37%. Regardless, Hall, Gardener, Perl, Stickney,

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and Pfefferbaum (1979) state that the presence of symptoms, even if insufficient for a diagnosis, may negatively affect job satisfaction, increase absenteeism, or lead to earlier retirements.

To address this apparent risk, a form of intervention termed Critical Incident Stress Debriefing (CISD) became popular in the 1980s (Mitchell & Bray, 1990). This post-incident debriefing and psychoeducational approach, initially developed by Mitchell (Lewis, 2003), was considered by its proponents to be a preventative intervention intended to avert the development of PTSD and related symptoms in emergency responders (Lohr, Hooke, Gist, & Tolin, 2003).

CISD is based on two premises. One is that exposure to traumatic stressors will lead to significant psychological problems in a substantial number of individuals. The second is that receiving a psychological intervention shortly following exposure will aid in preventing the onset of PTSD symptoms, and if symptoms do occur, that CISD will speed up the traumatized person's recovery (Lohr et al., 2003).

CISD is typically conducted in groups, by a trained facilitator. In a typical session, participants complete a series of phases. They discuss the facts of the event(s), the thoughts and feelings they had during the event(s), and any symptoms of distress that they experienced or are experiencing. The facilitator(s) finally present information regarding PTSD symptoms and coping techniques. (For further details, see Mitchell & Bray, 1990; Mitchell & Everly, 1995.)

CISD was disseminated as a programme "designed by an emergency person for emergency people" (Mitchell & Bray, 1990, p. 89). It provided an opportunity for employers to show tangible support following critical incidents (Gist, 2002). Employers were expected to benefit, as mentally healthy employees were thought to be better workers (Mitchell & Bray, 1990). Many organizations opted to use CISD, with some requiring attendance following exposure to critical events (Hokanson & Wirth, 2000). As a result, a cottage industry grew up around the use of CISD and similar procedures (Lewis, 2003; Gist, 2002). CISD has since expanded from the realm of emergency services into the general population (Myers & Wee, 2005).

As interest in CISD grew, researchers questioned both the premises and efficacy of CISD. Were debriefers being helpful, or were they following fashion, while engaging in a process that disseminated unsubstantiated information (NIMH, 2002; NPR, 2005)? For example, Herbert (in NPR, 2005) expresses concern that CISD providers may unintentionally mould participants into a pre-existing idea of a "correct" state of emotional responding. This is evident from statements that are made during CISD, such as, "We are all just people trying to struggle through some pain" (Mitchell & Everly, 1995, p. 45). The treatment is predicated upon the view that individuals typically suffer following stressful events, and are relatively unable to cope with their psychological impact. Thus the language used in CISD suggests that a participant should be reacting in a certain way. While dealing with personal reactions to an event, a first responder may thus also have to deal with the idea that their emotional response is inadequate.

Experimental investigations of CISD have produced little supportive evidence. Lewis (2003) has described the efficacy of CISD as "inconclusive" and concluded that there appears to be no evidence suggesting that CISD is effective for any specific population. Yet CISD was designed and is used as a psychological intervention specifically for emergency services first responders (McNally, Bryant, & Ehlers, 2003; Lewis, 2003).

The Workshop of Mental Health and Mass Violence completed a meta-analysis examining the effectiveness of CISD (National Institute of Mental Health, 2002). In that

review, seven gold standards for clinical research were employed to examine CISD. None of the published debriefing studies was deemed to have entirely met these standards. As such, the working group could not make a definitive conclusion on the effectiveness of early interventions (NIMH, 2002). Proponents and opponents of CISD frequently defend studies that support their claims, and point out flaws in studies that might support the opposition when debating the value of CISD (McNally et al., 2003). In the end, there is not a clear body of evidence that can definitively speak to the effectiveness or harm of CISD. However, the working group did conclude that ''some survivors (e.g. those with high arousal) may be put at heightened risk for adverse outcomes as a result of such early interventions'' (NIMH, 2002, p. 8). More recently, Lilienfeld (2007) discussed CISD as a ''potentially harmful treatment'' for some individuals based upon negative trends identified in meta-analytic investigations, due to possible interference with natural recovery processes. He notes that while many individuals report CISD as having been helpful, this is likely attributable to the fact that a vast majority of trauma exposed individuals get better with or without intervention.

Furthermore, the value of CISD is questionable based upon its core premises. One of these is that CISD was designed to prevent PTSD. However, Yehuda, McFarlane, and Shalev (1998, p. 1305) state that, ''Posttraumatic symptoms become chronic in only a subgroup of trauma survivors.'' While 60–90% of the population experiences at least one traumatic stressor at some point, only 7–9% of those exposed ever go on to develop the disorder (Breslau, 2002). As a result, Yehuda et al. (1998) conclude that PTSD is a *possible* outcome of traumatic exposure, not an *inevitable* one. Research by Shalev (2002) suggests that PTSD symptoms are a normal reaction following life-threatening events, in which the organism is reminded of dangerous environmental conditions, is hypervigilant for danger cues, and remains aroused in order to respond to nearby danger. This reaction typically decreases over 2 to 6 weeks after the event. In contrast, this decrease in symptoms tends not to occur for individuals who develop PTSD. Thus PTSD is best viewed as a disorder in which a natural response does not remit, rather than a problem of reaction to exposure.

Furthermore, trauma victims are just as likely to experience other psychological problems (e.g., other anxiety and mood disorders, and substance use) as they are to develop PTSD (Shalev et al., 1998). However, CISD focuses its attention on PTSD, an ailment which does not occur in a substantial majority of trauma-exposed individuals (McFarlane & Yehuda, 1996).

Orner (1994) discusses an alternative perspective regarding the development of trauma in emergency responders. He suggests that it is not occurrence of events that make them traumatic, but instead the degree to which events constitute an affront to an emergency responder's job-related beliefs and schemata. The individual does not have to be aware that they hold these beliefs for them to be impacted by events. These schemata are developed and enhanced by specialized training and daily rituals, such as the wearing of uniforms, which set emergency responders apart from the rest of society. Orner continues that emergency responders and society share the belief that first responders are there to protect society. Failure to do so would be a challenge to this belief. Furthermore, not only may individuals find themselves challenged by an event, groups of responders (such as emergency teams) may collectively experience events as traumatic if circumstances challenge their group schema; that is, the development of symptoms within individuals may be related to group expectations and norms about events.

Both Orner (1994) and McFarlane and Yehuda (1996) argue that, when trauma is induced by a challenge to personal or group schemata, it is imperative to have one's existing social support network involved in the healing. A meta-analysis of risk factors for PTSD (Brewin,

Andrews, & Valentine, 2000) indicates that the absence of social support following a traumatic event is the largest risk factor for PTSD. This coincides with findings from the mass disaster literature, which indicate that communities (and the individuals who constitute them) recover best if response efforts facilitate pre-existing social support networks, and that post-disaster response is based upon local decision making rather than by responders who are not members of the afflicted community (Hobfoll & Devries, 1995). Following events, people adapt by integrating the experience into their schemata, and McFarlane and Yehuda (1996) state that it is important to mobilize people's social networks to do so. Orner (1994), on the other hand, argues that a CISD team can provide the social network necessary for integration of critical incidents.

The view of trauma as at odds with firefighters' schemata is compelling. McFarlane and Yehuda's (1996) description of the mobilization of support is reminiscent of senior firefighters sitting at the hall talking about past fires and telling morbid jokes, while the junior men listened (Regehr & Bober, 2005). Fortunate rookies (novice firefighters) were those who had been assigned to an experienced and talkative group (Gist & Woodall, 1998). This social structure provided a set of expectations and norms regarding membership in the department and that particular group of firefighters.

However, when viewing trauma as a function of firefighters' schemata, it is questionable that CISD aids integration. It is equally, if not more likely, that CISD is an affront to the firefighters' self and group schemata, particularly when offered by an individual outside of the affected group. CISD appears to have a third premise: following an incident, first responders are not able to cope. Even if they believe they can handle it, the CISD team's implicit message is that it knows better. Furthermore, the possibility of mental disorder may be reinforced through leading statements, resulting in risk for increased rather than decreased symptomatology following the intervention.

Furthermore, the CISD model (Mitchell & Bray, 1990) is in part predicated upon methods of coping thought to be unique to the personality style of first responders. Mitchell and Bray (1990) have argued that as CISD is designed specifically for emergency responders, those not familiar with these special traits would fail in efforts to provide psychological assistance. However, the data purported to support these views has not been published, and the supportive personality "findings" have since been attributed as the product of personal opinion (Gist & Woodall, 1998). Thus one cornerstone of the CISD model does not exist.

Considering the absence of personality data, concerns about the appropriateness of CISD as an intervention, and with the concept of schemata in mind, perhaps it is time to ask firefighters what they themselves think is needed following traumatic events. To date, as far as we know no study has asked firefighters which type of intervention, if any, they would prefer. One study (Hokanson & Wirth, 2000) included a survey about post-incident intervention. However, it dealt solely with CISD, and respondents were only asked whether or not they would recommend debriefings; 78.5% of respondents with previous debriefing experience, and 84.5% of those without, recommended the process. However, this tells little about firefighters' preferences, as they may make different choices when provided with a range of interventions for different types of critical incident.

The present study sought the input of the Windsor, Ontario, Canada, Fire & Rescue Service to better understand what type(s) of intervention firefighters would prefer. The service utilizes four different approaches to post-incident interventions. One is CISD. A second is discussing the event back at the station, which is usually headed informally by the officer in charge of the crews. A third approach is to provide no intervention when firefighters do not request assistance or choose to not partake of one of the prior two interventions.

A fourth approach, termed one-to-one debriefing by the first author, has anecdotally been met with favourable response by firefighters. In this individualized, confidential intervention, firefighters are approached by a peer counsellor, who is a member of the department. Experience with this method suggests that, when so approached, firefighters willingly share their thoughts and feelings about their experience and their current state of well-being. If no assistance is felt to be needed, the peer counsellor moves on. One benefit of this has been that firefighters who are alert to the needs of their co-workers frequently have identified a "hot spot," i.e., another person they feel may need assistance. When these other firefighters have been approached, they have in many cases indicated that they *were* disturbed by the incident. It is a simple approach, yet one that values the firefighters' privacy and ability to accurately self report.

The purpose of the current study was to explore firefighters' preferences for these four types of post-incident psychological intervention. The interventions were incorporated into a survey that was administered to firefighters employed by the Windsor Fire and Rescue Service, an urban fire and rescue service in southwestern Ontario. Due to our interest in self-reported preferences, and the absence of published data on firefighter preferences for intervention, a self-report, cross-sectional survey was deemed appropriate. The survey asked firefighters to rate preferences for interventions following five different scenarios that varied in the degree to which they challenged firefighters' schemata. That is, they were a range of scenarios which varied in the degree to which they would be viewed as emotionally disturbing or reflect violations of effective role performance (e.g., the death of a child in a fire due to possible negligence by the firefighters). Pilot data confirming the ordering of scenarios is presented in the results below.

The primary interest was to identify preferred interventions. We proposed four hypotheses. First, we anticipated that formal interventions would be preferred after more severe scenarios, reflecting a saying in the fire service: "Small fire – small water, Big fire – big water." Formal intervention is a concrete acknowledgment of severity; the more serious the event, the more serious should be the action. Second, it was expected that firefighters would endorse informal peer support across all types of event. Third, given the rationale discussed previously regarding the challenges that CISD presents to individual and group schemata, it was thought that firefighters with CISD experience would rate CISD as lower in preference. Fourth, for more experienced firefighters, both *one-to-one debriefings* and *informal discussions at the station* were expected to be preferred as they are more a part of the social fabric of the department. Given Orner's (1994) suggested ritualistic development of emergency personnel beliefs, it may be that the more years of experience, the more that individuals become dedicated to the norms of the group. Thus, support from within the group may be more desirable than outside intervention.

Method

Participants

Participants were 142 firefighters of the Windsor Fire & Rescue Service (WFRS), Windsor, ON, Canada, comprising 54% (total $N = 261$) of the Firefighting Division (mean age 41.0 years, $SD = 8.3$; range 24–59; mean years of service 13.4, $SD = 9.7$, as compared with mean 14.1 years, $SD = 10.6$ for the entire Division). Six participants did not indicate length of service. Gender and ethnicity were not collected, as anonymity could not be guaranteed.

Institutional context

The WFRS has a long-standing Peer Counselling and Stress Committee. All levels of firefighters, officers, and administration are familiar with the role of the committee. Any WFRS member who feels that an individual or group of firefighters has been negatively impacted by an event may contact an "on call" peer member who will attend the scene or station. If deemed necessary, the peer counsellor can activate the team. All interaction is on a volunteer basis.

Procedures

The study was administered to firefighters by the first author at eight fire halls during January 2006. Written consent to conduct research was obtained from WFRS administration and the firefighters' union, and the study received approval from the University of Windsor Department of Psychology Ethics Committee.

Volunteers were read instructions, completed demographic information (age, marital status, years of firefighting experience, prior CISD experience), and were given the survey to complete. Once the research session commenced, the station was put out of service until the survey was complete. Emergency calls were covered by another station during this time period.

Measures

The primary measure was a survey by which firefighters rated preferences for four types of post-incident intervention, in relation to five critical incidents. The five scenarios, presented in random order, each described a critical incident in which a fictitious firefighter, "Firefighter Jones", was involved. The scenarios varied in degree of emotional and schema-related severity (see pilot results below). The scenarios were (from least to most severe): (1) a house completely lost to fire because of a lack of water; (2) a civilian who died as a result of injuries sustained in a motor vehicle accident; (3) an adult male found dead after a fire had been extinguished, who had not been found during the primary search, (4) finding two children during a primary search of a fire who do not survive; and, (5) two children found dead after a fire had been extinguished who had not been found during the primary search. After each scenario, firefighters rated four voluntary interventions that their department could provide. The choices were: *CISD*; *one-to-one debriefing*; *informal discussion at the station*; and *no intervention*. Each intervention was described during the instructions, and a written description was also provided. Interventions were rated on a 10 point scale (0 = strongly opposed; 5 = neither recommend or opposed; 10 = strongly recommend). Space was also provided for open comments about ratings.

Results

Severity of events

Traumatic severity is herein conceptualized as the degree to which events challenge firefighters' job-related beliefs. To examine the theoretical degree to which events might challenge firefighters' role-related schemas, pilot data was collected from a sample of 25 firefighters separately from the main data collection. Respondents rank ordered the severity of eight scenarios from least to most severe, five of which were selected as the target scenarios for the main survey. They also rated the degree to which each scenario was viewed as

potentially emotionally disturbing, stressful, and how responsible a firefighter would feel for the events on 0–7 point Likert-like scales.

Rankings confirmed the predicted ordering for the five target scenarios, with 85% of ratings in the predicted order. Ratings for emotional disturbance, stress, and responsibility mirrored these rankings (see Figure 1). Thus firefighters' opinions were commensurate with the theoretical ordering of the events.

Intervention preferences across and within scenarios

A graph of average preference ratings by scenario and preference ratings is shown in Figure 2. Initial analyses indicated a complex relationship between scenario and preference for intervention. The dataset was analysed using a 5×4 (5 scenarios by 4 interventions) repeated-measures ANOVA. Significant main effects for scenario, $F(2.82, 371.98) = 172.75$, $p < .01$, partial $\eta^2 = .57$, intervention, $F(2.44, 321.47) = 329.64$, $p < .01$, partial $\eta^2 = .71$; and an interaction emerged, $F(6.16, 813.28) = 89.92$, $p < .01$, partial $\eta^2 = .41$. To explore the interaction, we examined the trend for interventions across scenarios, and patterns for interventions within scenarios. Paired samples t-tests with Bonferroni adjustments were used for post-hoc contrasts.

Interventions across scenarios

No intervention. "No intervention" was not highly endorsed for any scenario, and was only viewed as a viable but low-quality response to the first scenario. A within-subjects ANOVA on the five levels of scenario revealed linear, $F(1, 133) = 39.58$, $p < .01$, and quadratic trends, $F(1, 133) = 5.77$, $p < .05$. The quadratic was due to higher ratings for Scenario 1 than the remaining scenarios, $t(133) = 5.66$, $p < .01$. The decrease between Scenarios 1 and 2 was greater than the differences between the other scenarios, which were linear, $F(1, 133) = 21.09$, $p < .01$.
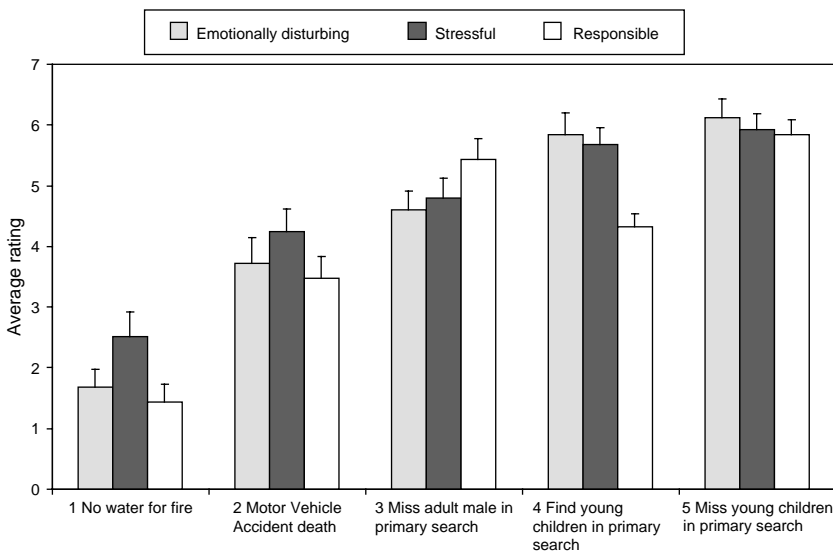

Figure 1.   Pilot study: severity ratings for five scenarios. $N = 25$. Bars show standard errors.
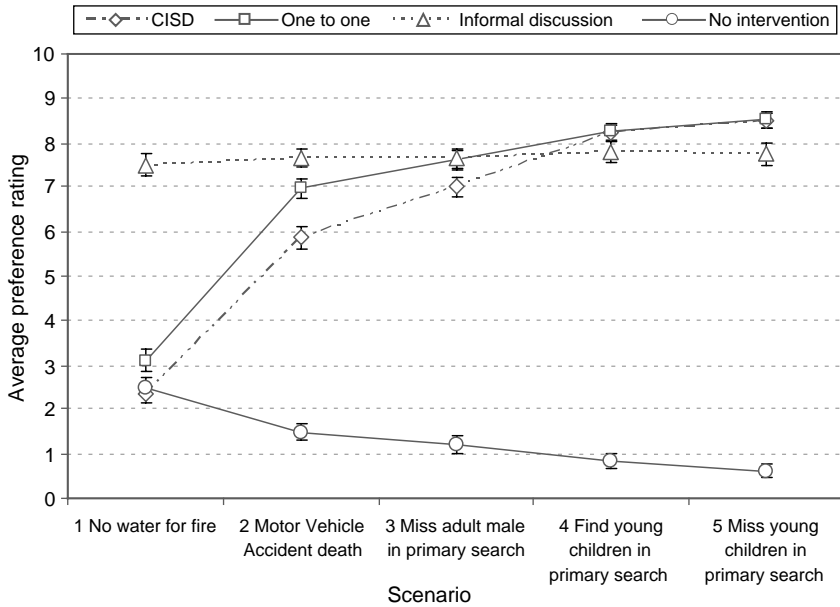
Figure 2. Firefighters' mean preference ratings for interventions by scenario. CISD: Critical Incident Stress Debriefing. Bars show standard errors.

Informal discussion. Participants expressed a strong preference for this option, regardless of scenario severity. A one-way repeated-measures ANOVA on *informal discussion* ratings revealed no differences across scenarios, $F (2.07, 281.79) = .37$, *ns*.

CISD. Participants expressed increasing preference for CISD, particularly from the first to second scenarios, with no differences for the most severe events. A within-subjects ANOVA on scenario revealed linear, $F (1, 137) = 437.11$, $p < .01$, quadratic, $F (1, 137) = 131.07$, $p < .01$, and cubic trends, $F (1, 137) = 8.5$, $p < .01$. The cubic was due to lower ratings for Scenario 1 compared to the other scenarios, $t (137) = 23.84$, $p < .01$; a linear relationship between Scenarios 2 to 4, $F (1, 137) = 51.15$, $p < .01$; and no difference between Scenarios 4 and 5 $(p > .10)$.

One-to-one. Participants rated one-to-one intervention as increasingly preferred across scenarios, particularly between the initial scenarios. A within-subjects ANOVA on scenario revealed linear, $F (1, 137) = 373.96$, $p < .01$, and quadratic trends, $F (1, 137) = 169.01$, $p < .01$. The quadratic was due to lower ratings for Scenario 1 compared to the other scenarios, $t (137) = 20.98$, $p < .01$. Subsequent increases in ratings were linear, $F (1, 137) = 52.23$, $p < .01$.

Within-scenario contrasts

For Scenario 1, the preferred choice *was informal discussion,* which was greater than for the remaining interventions, $t (139) = 17.36$, $p < .01$. The remaining interventions fell into the "opposed" range. *One-to-one* was preferred over *CISD*, $t (139) = 3.64$, $p < .001$, while neither differed from *no intervention*, $(p > .10)$. Thus formal intervention was perceived as unnecessary.

From Scenario 2 onward, *no intervention* was significantly below the other interventions (all $p < .01$). To simplify reporting, this option was removed from remaining analyses. For Scenario 2, *informal discussion* received higher ratings than *one-to-one*, $t(138) = 5.74$, $p < .01$, Cohen's $d = .29$, which was again rated higher than *CISD*, $t(138) = 4.47$, $p < .01$, $d = .40$.

For Scenario 3, preferences for *one-to-one* were greater than for *CISD*, $t(140) = 2.56$, $p < .05$, $d = .24$, while neither group differed from *informal discussion* ($p > .10$). For Scenario 4, preferences did not differ (all $p < .10$). For Scenario 5, preferences for *CISD* and *one-to-one* did not differ, and both were greater than *informal discussion*, $t(138) = 3.09$, $p < .01$, $d = .32$.

Summary of findings across and within scenarios

The first hypothesis, that increasing scenario severity would be associated with increased interest in formal intervention, was supported. Interest in formal intervention increased as a function of severity. *One-to-one* was preferred over *CISD* for events of low to moderate severity, and at higher severity both were equally preferred.

The second hypothesis, that participants would highly endorse informal peer support across scenarios, was supported. Informal discussion exceeded the more formal interventions at low levels of scenario severity, and was rated as equal in preference for higher severity. The general trend was for informal support at lower levels of severity. As severity increased, endorsement of formal interventions increased, with *one-to-one* exceeding *CISD* at moderate levels of severity.

CISD experience and years of service

The hypotheses regarding relationships between intervention preferences and CISD experience or years of firefighting experience were not supported. Individuals with ($N = 70$) and without ($N = 58$) CISD experience were added to the analyses as a random factor. Years of firefighting experience were added to the analyses as a covariate. Neither variable produced significant changes in the pattern of findings (all $p > .05$).

Discussion

These results show that firefighters' preferences for intervention varied by severity of scenario. *No intervention* was viewed unfavourably across scenarios, and thus support was perceived as desirable. Informal discussion received uniformly high ratings, thus respondents endorsed the importance of a strong, informal institutional culture in dealing with everyday challenges. For the scenario least likely to violate firefighters' schemata regarding competent performance, informal discussion was preferred. For scenarios of moderate impact, where events were attributable to factors unrelated to performance, preference for one-to-one debriefing rose quickly to levels similar to informal discussion. This may reflect that firefighters do experience difficulty after such situations from time to time, but that the group as a whole does not typically struggle in such circumstances. Finally, for scenarios of greatest severity, in which performance inconsistent with desired job performance is present, both one-to-one and CISD were endorsed.

This could mean several things. It may suggest that respondents were acknowledging the collective impact of these scenarios, and view CISD as providing a formal intervention provided to the group as a whole. Alternatively, it could mean that in such situations firefighters are indicating that something must be done, and that they are not discriminating between types of intervention. This latter interpretation is the most parsimonious interpretation of the current data. Firefighters appear to be indicating that some type of meaningful healing experience is required in circumstances in which powerful feelings of inadequacy and guilt may be experienced.

Given that informal discussion, CISD, and one-to-one are quite different, yet are almost equally preferred, the question arises as to why preferences are similar. Perhaps they are viewed as having something in common. In each, someone is checking in with the firefighter to see how they are doing. What CISD provides that is not implicitly present in the others is a public, collective recognition of the difficulty of the event. The question remains whether a formalized CISD process is necessary to achieve this end, or if processing of collectively impacting events might be addressed within the framework of the support network and with peer counsellors.

What is clear from some of the open-ended comments is that firefighters did not view the differences between interventions as black and white. Each may be welcomed at different times, given the particular circumstances. The formality of CISD may appeal to some, while others may be uncomfortable with the group process. Some firefighters wrote that the *individual* crew and firefighters needed to be considered before an intervention was put in motion. In terms of intervention, one size does not fit all.

While these interventions share some similarities, it is also important to note some differences. *Informal discussion* was highly rated across scenarios. This may reflect group schema as discussed by Orner (1994) and McFarlane and Yehuda (1996). As stated previously, when the group schema is challenged by a critical event, it is imperative that the group come together for the healing process. The strength with which *no intervention* was rejected may also reflect the protectiveness and strength of the group schema.

Orner (1994) stated that CISD teams bring the social network to the group. Yet these results suggest that that the existing social network may be the primary source for support. As events become more severe, increased ratings for formal interventions suggest that firefighters may be recognizing that, in order to assist each other, there may be times to go *outside* of the group for help. However, it is clear from the comments that peer counsellors are viewed as having specialized training. The endorsement of one-to-one may reflect the status of the counsellor as both peer and expert with added knowledge. In CISD, however, the facilitator is clearly not of the ranks.

In the most severe scenarios, *CISD* and *one-to-one* are virtually identical. This *may* give credence to one-to-one debriefings as the primary choice of intervention. Firefighters recognize that critical events, and participants in these events, do not always interact in clearly defined terms. Using only one type of intervention is not appropriate. One-to-one debriefing allows the peer counsellor to assess the individual and group. Because of their training, peer counsellors may administer psychological "first aid" if necessary. The fact that peers are still a part of the group fabric provides invaluable first-hand understanding that can be utilized when assessing the need for further intervention. An advantage of peer counsellors and individualized debriefing, as opposed to CISD teams, is that they may be deployed quickly and efficiently, while maintaining the expertise of a mental health professional as an available tool for intervention.

As individual debriefings are peer led, it is also clear that they cannot always be the first line of intervention. Extreme events, such as mass casualty or dealing with an on-duty firefighter death, may be beyond their scope of training and experience. Is this the time to call for the CISD team? Strengths and weaknesses of interventions following such events require further study.

Limitations and future study

We do not know how firefighters might have responded if asked to select the one best intervention for each scenario, or if a particular intervention should not be provided for a given scenario. As some respondents commented that different interventions may appeal to different firefighters, future studies might also elicit preferences for combinations of interventions.

We were interested in firefighter perceptions regarding interventions that should be available to a peer, thus the scenarios asked about a fictional firefighter. Several comments received from some firefighters indicate that they may have answered differently if the survey had asked, in effect, "What would you like your department to offer *you*?" Replacing the third person target in the scenario with the participating firefighter may affect responses in future work.

Conclusion

This survey may be the first of its kind specifically to ask firefighters for their preferences regarding post-critical incident intervention. In the absence of a body of evidence in support of CISD or similar interventions, this study serves as a return to the "first step" in determining what interventions are most appropriate. Self-report from consumers of psychological interventions is known as a powerful and accepted tool in counselling. Why would we not trust it as one critical source in the case of traumatic events? Future studies may compare different levels and methods of intervention. However, on the basis of this survey, future studies should focus not only on what may be effective, but also on what is acceptable to the firefighter.

References

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders*, 4th Ed. (Text Revision). Arlington, VA: American Psychiatric Publishing.

Breslau, N. (2002). Epidemiologic studies of trauma, posttraumatic stress disorder, and other psychiatric disorders. *Canadian Journal of Psychiatry*, *47*, 923–929.

Brewin, C.R., Andrews, B. & Valentine, J.D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, *68*, 784–766.

Bryant, R. & Harvey, A. (1995). Posttraumatic stress in volunteer firefighters: Predictors of distress. *Journal of Nervous and Mental Disease*, *183*, 267–271.

Corneil, W., Beaton, R., Murphy, S., Johnson, C. & Pike, K. (1999). Exposure to traumatic incidents and prevalence of posttraumatic stress symptomatology in urban firefighters in two countries. *Journal of Occupational Health Psychology*, *4*(2), 131–141.

Gist, R. (2002). What have they done to my song? Social science, social movements, and the debriefing debates. *Cognitive and Behavioral Practice*, *9*, 273–279.

Gist, R., & Woodall, S.J. (1998). The origins and natural history of debriefing. *The Australasian Journal of Disaster and Trauma Studies*. Retrieved September 15, 2005, from http://www.massey.ac.nz/∼trauma/issues/1998-1/gist1.htm

Hall, R.C., Gardener, E.R., Perl, M., Stickney, S.K., & Pfefferbaum, B. (1979). The professional burnout syndrome. *Psychiatric Opinion*, *16*(4), 12–17.

Haslam, C. & Mallon, K. (2003). A preliminary investigation of post-traumatic stress symptoms among firefighters. *Work & Stress*, *17*, 277–285.

Hobfoll, S.E. & deVries, M.W. (1995). *Extreme stress and communities: Impact and intervention*. Dordrecht: Kluwer.

Hokanson, M. & Wirth, B. (2000). The critical incident stress debriefing process for the Los Angeles County Fire Department: Automatic and effective. *International Journal of Emergency Health*, *2*(4), 249–257.

Kessler, R.C., Sonnega, A., Bromet, E., Hughes, M. & Nelson, C.B. (1996). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, *52*, 1048–1060.

Lewis, S.J. (2003). Do one-shot preventions for PTSD really work? A systematic research synthesis of psychological debriefings. *Aggression and Violent Behavior*, *8*, 329–343.

Lilienfeld, S.O. (2007). Psychological treatments that cause harm. *Perspectives on Psychological Science*, *2*(1), 53–70.

Lohr, J.M., Hooke, W., Gist, R. & Tolin, D.F. (2003). Novel and controversial treatments for trauma-related stress disorders. In S.O. Lilienfeld, S.J. Lynn & J.M. Lohr (Eds.), *Science and pseudoscience in clinical psychology* (pp. 259–271). New York: Guilford.

McFarlane, A.C. & Yehuda, R. (1996). Resilience, vulnerability, and the course of posttraumatic reactions. In B.A. van der Kolk, A.C. McFarlane & L. Weisaeth (Eds.), *Traumatic stress: The effect of overwhelming experience on mind, body, and society* (pp. 155–181). New York: Guilford.

McNally, R.J., Bryant, R.A. & Ehlers, A. (2003). Does early psychological intervention promote recovery from posttraumatic stress? *Psychological Science in the Public Interest*, *4*(2), 45–79.

Mitchell, J.T. & Bray, G. (1990). *Emergency services stress: Guidelines for preserving the health and careers of emergency services personnel*. Englewood Cliffs, NJ: Prentice Hall.

Mitchell, J.T. & Everly, G.S. (1995). *Critical incident stress debriefing: The basic course workbook*. Ellicott City, MD: International Critical Incident Stress Foundation, Inc.

Myers, D. & Wee, D.F. (2005). *Disaster mental health services: A primer for practitioners*. New York: Brunner-Routledge.

National Institute of Mental Health [NIMH] (2002). *Mental health and mass violence: Evidence-based early psychological intervention for victims/survivors of mass violence*. NIH Publication No. 02-5138. Washington, D.C.: U.S. Government Printing Office.

National Public Radio [NPR] (2005, September 12). Outsourcing compassion: Debriefing trauma patients. *All Things Considered* [Radio Broadcast].

Orner, R.J. (1994). Intervention strategies for emergency response groups: A new conceptual framework. In S.E. Hobfoll & M.W. de Vries (Eds.), *Extreme stress and communities: Impact and intervention* (pp. 499–521). London: Kluwer Academic Publishers.

Regehr, C. & Bober, T. (2005). *In the line of fire: Trauma in the emergency services*. New York: Oxford University Press.

Shalev, A.Y. (2002). Acute stress reactions in adults. *Biological Psychiatry*, *51*, 532–543.

Shalev, A.Y., Freedman, S., Peri, T., Brandes, D., Sahar, T., Orr, S.P. & Pitman, R.K. (1998). Prospective study of posttraumatic stress disorder and depression following trauma. *American Journal of Psychiatry*, *155*, 630–637.

Yehuda, R., McFarlane, A.C., & Shalev, A.Y. (1998). Predicting the development of posttraumatic stress disorder from the acute response to a traumatic event. *Society of Biological Psychiatry*, *44*, 1305–1313.