

Was Psychological Debriefing Dismissed Too Quickly? An Assessment of the 2002 Cochrane Review

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Abstract. *Emergency personnel and first responders are often exposed to potentially traumatic incidents which can increase the risk of acute stress reactions and ultimately post-traumatic stress symptoms. Psychological Debriefing (PD) has been used as an early group crisis intervention to minimize the risk of acute stress reactions as a result of dealing with traumatic incidents among the emergency services population. Despite its ongoing use within the emergency services for the past three decades, the effectiveness of PD has been a source of considerable debate in academia, with a Cochrane Review concluding PD to be ineffective. This discrepancy between research and practice compels a thorough examination. This paper thus assesses the abovementioned Cochrane Review and the studies included in it based on the Cochrane Handbook's guidelines on interventions to ascertain if PD has been adequately evaluated as an early group crisis intervention. The findings indicate that PD is worth being reassessed when implemented on the target population it was originally intended for—group of emergency personnel and first responders.*

Keywords: *psychological debriefing, critical incident stress debriefing, emergency personnel, crisis intervention, post-traumatic stress disorder, Cochrane Review, early intervention, acute stress reactions, first responders*

Introduction

Firefighters, police officers, paramedics and other emergency service personnel are often exposed to potentially traumatic incidents due to the nature of their jobs and, consequently, this population has suffered a high prevalence of alcohol abuse (North et al., 2002), poorer sleep quality (Neylan et al., 2002) and increased risk of developing Post-Traumatic Stress Disorder (PTSD) (Alexander & Klein, 2001; Carlier, Lamberts, & Gersons, 1997; Murphy, Beaton, Pike, & Cain, 1994).

To address these negative effects, former firefighter and psychologist Jeffery Mitchell developed Critical Incident Stress Management (CISM) (Everly & Mitchell, 1999; Mitchell, 1983), of which Critical Incident Stress Debriefing (CISD) is one component (Mitchell, 1983). Mitchell later collaborated with the Norwegian Psychologist Atle Dyregrov, who coined the alternative term to CISD, Psychological Debriefing (PD) (Dyregrov, 1989).

PD/CISD is a seven-phase group crisis intervention process, specifically targeted for emergency personnel following exposure to a potentially traumatic incident. It

is an early intervention method intended to be implemented between 48 to 72 hours after a critical incident occurs, barring delays that may occur when handling incidents. PD/CISD is one component of the CISM program; a multicomponent approach for trauma support for those directly involved in extremely stressful incidents at work. It includes pre-incident education; defusing in the immediate aftermath of exposure to an incident, psychological debriefing and follow-up to assess the risk of deterioration, and referral if and when necessary for clinical intervention (Everly, Flannery Jr, & Mitchell, 2000). PD aims to reduce acute stress reactions among emergency first-response workers exposed to extremely stressful incidents including exposure to scenes of horrific murders, natural disasters, child abuse, suicide, etc. Such exposures are an inherent part of the job of first responders, and as such, are seen as an occupational hazard. The impact on wellbeing can either be acute, or a result of accumulation of exposure to multiple incidents over the course of a career (Alexander & Klein, 2001; Murphy et al., 1994).

PD endeavors to normalize and validate acute stress reactions to make the officers aware that what they are

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experiencing (e.g. reliving, hyperarousal) are normal reactions to abnormal events. Another aim of PD is to enhance group cohesion, bringing everyone directly involved in the incident together to discuss their experiences and reactions. Discussion serves to naturally facilitate validation of reactions and normalize what is being experienced and shared. We know from a significant amount of research that social support is predictive of positive wellbeing among police officers and other emergency personnel, and this is a vitally important element of PD (Graf, 1986; Kaufmann & Beehr, 1989; Kirkcaldy & Furnham, 1995; Patterson, 1999; Stephens, Long, & Miller, 1997). According to PD, this is an integral part of recovery within the work group culture of emergency services, as it relies heavily on team work and team support (Hartsough & Myers, 1985; Murphy et al., 1994; Neale, 1991). PD thus seeks to: 1) minimize the risk of developing post-traumatic stress symptoms through education, discussion, validation and normalization of group shared reactions, 2) facilitate recovery to adaptive individual and group functioning and, 3) identify group members who may benefit from a referral for evidence-based clinical intervention (Everly et al., 2000; Mitchell & Everly, 1997).

PD is typically facilitated by a team of two psychologists or two trained peer support facilitators, and usually lasts about one to three hours depending on the size of the group. Participants are educated that symptoms of acute stress reactions usually decrease over four to six weeks. Information regarding where and how to seek this help is provided at the end of the PD session, commonly on leaflets that participants can take home (Mitchell & Everly, 1997). Additionally, a complete CISM process includes a follow-up session typically scheduled four to six weeks after the incident wherein officers are assessed for risk of deterioration in reactions and development of PTSD, low mood and anxiety symptoms (Mitchell & Everly, 1997).

Psychological debriefing has been practiced for decades at emergency services in a manualized format in the US, and in the UK, Scandinavia, and Europe, it is more process-focused (Dyregrov, 1997). A comprehensive systematic review on the subject (Arendt & Elklit, 2001) including 25 studies, concluded PD to be effective when practiced among the intended target group, i.e., emergency personnel as a group intervention (Adler et al., 2008; Bohl, 1991; Jenkins, 1996; Shalev, Peri, Rogel-Fuchs, Ursano, & Marlowe, 1998).

Despite decades of continued practice among emergency service organizations, conflicting evidence nevertheless exists in the research literature regarding the effectiveness of PD. Debate started with articles by Bisson and Deahl, (1994) and Raphael and Meldrum, (1995) which suggested that more empirical evidence was needed

to confirm the efficacy of the intervention. While several reviews suggested that PD was effective (Everly, Boyle, & Lating, 1999; Everly et al., 2000; Robinson & Mitchell, 1993), one randomized controlled trial (RCT) (Bisson, Jenkins, Alexander, & Bannister, 1997) suggested that PD may have been harmful and another RCT (Rose, Brewin, Andrews, & Kirk, 1999) suggested that PD failed to show efficacy, thus challenging the PD framework. These studies were followed by a Cochrane Review (Rose, Bisson, Churchill, Wessely, & Rose, 2002) co-authored by writers of the two above-mentioned RCTs, which concluded PD to be ineffective. Notably however, these RCTs (Bisson et al., 1997; Rose et al., 1999) that informed the Cochrane Review were not entirely consistent with key features of the PD framework, particularly in relation to the recipients of the intervention. This provided grounds to further explore other studies included in the Cochrane Review. This paper will thus assess the Cochrane Review published in 2002 (updated in 2010) and the studies included in it to consider whether CISD/PD has been adequately and fairly evaluated as an early group crisis intervention. The assessment will be based on the Cochrane Handbook's guidelines for preventative interventions.

Assessment of the Cochrane Review on Psychological Debriefing

Cochrane reviews are considered to be the gold standard among systematic reviews assessing the effectiveness of medical interventions, given their rigorous inclusion criteria, lack of conflicts of interest from authors, and well-defined rules and regulations as stated in the Cochrane Handbook. This appraisal will look at the Cochrane Review on psychological debriefing (Rose et al., 2002), updated in 2010, to see if it complies with the fundamental guidelines set out in the Cochrane Handbook.

Did the Cochrane Review include studies that implemented PD as it was intended?

The Cochrane Handbook's section on "Integrity of Interventions" (7.3.4.1) states that compliance with, and fidelity to an intervention is of critical importance when testing an intervention and must be evident if a study is to be included in a review. The Handbook mentions that the degree to which specified procedures or components of an intervention are implemented can have important consequences on test findings, particularly for preventative interventions. It also states that: "Information about integrity can help determine whether unpromising results are due to a poorly conceptualized intervention or to an incomplete delivery of the prescribed components." (Higgins & Deeks, 2008, p. 7.3.4.1)

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The Cochrane Handbook further stipulates five aspects that must be taken into consideration when the integrity of preventive programs is assessed, these are described in the appendix (Dane & Schneider, 1998). The following section will assess how the Cochrane review (Rose et al., 2002) on psychological debriefing (hereinafter referred to as “the Review”) adheres to these five aspects.

1) *The extent to which specific intervention components were delivered as prescribed (Adherence) (Dane & Schneider, 1998),*

The Review includes studies that violate aspect 1: *Adherence*. For example, the RCT by Bisson and colleagues (Bisson et al., 1997) provides CISD to individual/couple burn victims at his/her hospital bedside. CISD however was originally developed and intended for working groups of emergency personnel exposed to secondary, work-related trauma (Dyregrov, 1989; Mitchell, 1983). Bisson and colleagues, however, did not provide a rationale to explain why PD had been used in a non-emergency service personnel setting, nor did they explain why PD was suitable for use with civilian individuals. The study also did not provide any explanation as to why a group intervention was delivered individually. The RCT by Rose and colleagues (Rose et al., 1999), on individual victims of violent crime, also violated the Cochrane adherence regulation. Civilian victims of direct trauma were sampled using hospital and police records and individual debriefing was provided based on a manual that was “loosely based on Mitchell’s (1983) protocol, adapted for individuals,” (Rose et al., 1999) however, no details were provided to explicate what the said adaptation entailed.

Other examples of studies included in the Review that were not conducted on the intended recipients of PD (emergency service personnel), are: an RCT on effects of brief counseling for relatives of seriously injured or ill patients (Bunn & Clarke, 1979), RCT of debriefing for road traffic accident victims (Hobbs, Mayou, Harrison, & Worlock, 1996), influence of debriefing on emotional adaptation in women following early miscarriage (Lee, Slade, & Lygo, 1996) and a few RCTs on debriefing of mothers after a difficult childbirth (Lavender, & Walkinshaw, 1998; Priest, Henderson, Evans, & Hagan, 2003; Small, Lumley, Donohue, Potter, & Waldenström, 2000). In total, 14 out of 15 studies included in this Review were implemented on direct victims of trauma and not on PD’s intended target group, i.e., group of emergency service personnel exposed to potential secondary trauma.

Another violation of adherence (cf. the appendix) to PD is seen in the study by Rose and colleagues on victims of violent crime (Rose et al., 1999). This study mentions that when the participants were hesitant to talk about the

negative emotions they experienced during the incident, interviewees were prompted with specific questions designed to elicit details of the negative emotions (Rose et al., 1999, p. 796). This strategy is explicitly discouraged in the CISD model (Mitchell, 1983). Coercing to talk about experiences that a participant is uncomfortable discussing is discouraged at CISD sessions. In fact, the debriefing facilitators are advised to move onto other members of the team and not probe the distressed individual as this may have negative psychological consequences (Mitchell & Everly, 1997). As this study conducted PD individually (Rose et al., 1999), there weren’t any other team members to move focus on.

2) *Number, length and frequency of implementation of intervention components (Exposure) (Dane & Schneider, 1998),*

The CISM manual (Mitchell & Everly, 1986) states that debriefing is an early intervention, which is supposed to be carried out 48-72 hours after a critical incident, barring delays that may occur when handling critical incidents. The reason for this time-frame is that the intervention is geared to emergency personnel, who are expected to return to duty as early as possible where another traumatic incident may potentially soon occur (Arendt & Elklit, 2001). However, in the Review 8 out of 15 studies carried out debriefings far later than the timeframe the intervention advocates. For example, in one RCT, debriefings were carried out between 2-19 days after the burn trauma (Bisson et al., 1997). Similarly, the RCT on violent crime victims also deviates from the timing recommended and provided debriefing between 9-31 days after trauma (Rose et al., 1999). Other studies included in the Review that were conducted outside the recommended intervention time were: within one week of the incident (Bordow & Porritt, 1979), four studies were conducted within two weeks of the incident (Conlon, Fahy, & Conroy, 1999; Lee et al., 1996) (also Dolan and colleagues, unpublished data; Sijbrandij, unpublished data 2002), and two studies with no specified time frame (Bunn & Clarke, 1979) (also Litz and colleagues, unpublished data, 2004).

Secondly, the length of PD, i.e., the duration of a session is recommended to be one to three hours (60-180 minutes) depending on the number of participants in a group, and the intensity of the traumatic event (Mitchell & Everly, 1997). Nevertheless, a minimum of 60 minutes is recommended even in the smallest of groups to go through all seven steps thoroughly with the entire group (Mitchell, 1983; Mitchell & Everly, 1997). For example, one study carried out a single 20-minute debriefing session (Bunn & Clarke, 1979) and another study conducted a single 30-minute session (Conlon et al., 1999). Thus, at least two studies included in the Review do not carry out the

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intervention for the prescribed length of time, again violating aspect 2: *Exposure*.

3) *Qualitative aspects of the intervention delivery that are not directly related to the implementation of the prescribed content, such as implementer enthusiasm, training of implementers, global estimates of session effectiveness, and leaders attitude towards the intervention (Quality of Delivery)(Dane & Schneider, 1998).*

The Review includes several studies that violate aspect 3 (cf. the appendix) from Cochrane Handbook's section 7.3.4.1, in terms of training of implementers of the intervention. PD advocates two psychologists or two peer support professionals trained by psychologists who are skilled in the 7-stage model, wherein, being from the same work field, sound group dynamics and group cohesion is integrated in the process. Research shows that interventions being delivered by peer supporters is key in high-risk settings, substantial benefits as described by participants include improved social functioning, lower rates of isolation, increased pursuit of educational and employment goals, larger social networks, and increased support seeking (Creamer et al., 2012; Davidson et al., 1999; Froland, Brodsky, Olson, & Stewart, 2000; Humphreys & Rappaport, 1994).

In this Review, however, one RCT (Bisson et al., 1997) provides no description of the 'facilitator' conducting the debriefings nor does it specify what sort of training the 'facilitators' received for conducting debriefings; hence there is a lack of transparency regarding the quality of delivery. One study included in the Review was conducted by a nurse, social worker, and research assistant (Hobbs et al., 1996), even if they were all trained by psychologists, their diverse backgrounds demonstrate inconsistency in the implementation of the intervention within the study itself. Other studies included in the Review that have questionable implementer training are debriefings conducted by midwives (Lavender et al., 1998; Small et al., 2000).

4) *Measures of participant response to the intervention, which may include indicators such as levels of participation and enthusiasm (Participant Responsiveness) (Dane & Schneider, 1998),*

No evidence was found to contest this particular aspect of integrity of intervention.

5) *Safeguard checks against the diffusion of treatments, that is, to ensure that the subjects in each experimental group received only the planned interventions (Program Differentiation) (Dane & Schneider, 1998).*

PD is a single element of a full critical incident stress management (CISM) process for groups of emergency service personnel, which includes (but is not limited to) pre-incident education, defusing, debriefing, initiating support from colleagues, follow-up risk assessments, and referral for further individual clinical intervention if need be (Everly & Mitchell, 1999). Contrarily, all the studies included in the Cochrane Review were only limited to single session interventions with no follow-up scheduled, or any possibility of continuing the process if needed. Given that most studies were conducted with individual primary victims, the participants did not have a group of co-clients, as the element of social support is a vital function of group debriefing. As mentioned above, PD/CISD also allows identification of individuals who are not adapting well after a traumatic incident and following them up after four to six weeks to assess risk of deterioration is imperative in a CISM process with integrity. Herein participants who show considerable signs of distress are scheduled for follow-up one-on-one clinical intervention. This omission is a key violation of the fifth aspect: *Program Differentiation*.

Moreover, this Review focused on only one of the aims of psychological debriefings—preventing post-traumatic stress. This is problematic considering that the purpose of PD is threefold: 1) to prevent and mitigate symptoms of acute stress reactions through social support, education, validation and normalization, 2) to promote recovery and acceleration of return to normal functioning, and 3) to identify individuals in need of referral (Everly & Mitchell, 1999; Mitchell, 1983). Hence, its evaluation as an intervention should be considered in relation to each. Aims two and three of PD were not measured or addressed by any of the studies included in the Review. Furthermore, the benefits of group cohesion facilitation that debriefing has been shown to promote were not recognized or discussed anywhere in the Review.

Furthermore, two studies (Bordow & Porritt, 1979; Bunn & Clarke, 1979) included in the Cochrane Review evaluated crisis interventions entirely different from the CISD/PD framework, in fact, these studies were conducted before the development of CISD/PD (Dyregrov, 1989; Mitchell, 1983). One study evaluated a crisis intervention which assessed male road traffic accident victims' practical support, emotional support, and social support (Bordow & Porritt, 1979). The other study provided brief counselling sessions or no sessions to relatives of patients arriving in hospital with emergencies, to test how it affected their anxiety levels (Bunn & Clarke, 1979). These two studies do not evaluate the framework of CISD/PD as advocated, in fact they test something entirely different, hence not adhering to the fifth aspect of integrity of interventions: *Program Differentiation*.

Reflection on Fidelity to Cochrane Guidelines

As described above, the studies included in the Cochrane Review (Rose et al., 2002) are in violation with four out of the five aspects of the integrity of CISD/PD as an intervention as per the Cochrane Handbook.

Other Technical Considerations

For first responders, exposure to potentially traumatic events is expected as a part of the job as they are trained to actively manage incidents, in contrast to the general population that are untrained passive recipients of an unforeseen event (Castro & Adler, 2011). As described in section 1) adherence, the Review includes 14 out of 15 studies where debriefing is provided to individual civilian victims, as opposed to a group of emergency personnel. The only study included in the Review that adheres to the intervention's intended target group—a group debriefing controlled trial of a platoon of soldiers (Litz et al., unpublished data, 2004)—was later excluded from the meta-analysis because the study randomized a group of soldiers, whereas all the other studies were randomized individually.

Another reason the Review authors provided for this exclusion was that the methods of including cluster-randomized trial were still being developed within the Cochrane Handbook in 2002 (when the original review was written) and hoped that it would be included in an updated Issue 3 in 2005 (Rose et al., 2002, p. 6). However, the latest edit of this Review was conducted in 2010, by which time the Cochrane handbook had developed methods for cluster-randomized trial. Nevertheless, it still did not include a new RCT on group debriefing of military soldiers (Adler et al., 2008), finding that CISD was minimally associated with lower reports of posttraumatic stress and aggression (vs. Stress Management Condition). The results also showed CISD to have higher perceived organizational support (vs. Survey-only condition).

Discussion

Despite the Cochrane Review, psychological debriefing has been practiced for decades at emergency services in numerous countries, and there are studies that deduce PD/CISD to be effective when practiced in the intended target group. As mentioned above, a comprehensive systematic review (Arendt & Elklit, 2001) including 25 studies concluded PD to be effective when provided for emergency personnel as a group intervention, as originally intended. They stated that the confusion in the meaning of PD/CISD may have led to “erroneous and damaging use,” making it hard to investigate the effectiveness of the method (Arendt & Elklit, 2001). They

further recommended that the use of PD should be restricted to its original area of application—working group of emergency personnel, since a preventative effect has been found only when used in this way. For example, a study on 36 medical emergency workers (Jenkins, 1996), a study on 60 police officers involved in shooting accidents (Leonard & Alison, 1999) and 41 soldiers exposed to combat (Shalev et al., 1998), among others, have indicated positive results. As these studies were not randomized controlled trials, they were, however, not included in the Cochrane Review which dismissed them on the grounds of lack in methodological rigor.

Nevertheless, there have been two group randomized controlled trails of PD conducted on the intended target population that has managed to overcome the methodological difficulties so far, which have not been included in the revision of the said Cochrane Review in 2010. The first study among a military population, specifically U.S. peacekeepers (Adler et al., 2008), demonstrated that CISD was minimally associated with lower reports of posttraumatic stress compared to Stress Management Class (SMC) condition and higher perceived organizational support in comparison to survey-only condition. However, this may be because this particular CISD was aimed to address the entire deployment period and not tied to one specific critical incident which is what CISD is intended for. Military personnel reported that they liked CISD more than the SMC, and CISD did not cause any undue distress or harm.

The second and the most recent cluster randomized control trial (C-RCT) on PD, was conducted among firefighters within 72 hours of the incident (Tuckey & Scott, 2014). In this study it was found that the PD group was associated with significantly less alcohol use post-intervention, relative to just screening, and significantly greater post-intervention quality of life in comparison to stress management education (SME). There were no significant effects on post-traumatic stress or psychological distress, but overall, this study concluded that CISD/PD may benefit broader functioning following exposure to work-related traumatic events, which is essentially the second aim of CISD/PD. One of the features of CISD is its sensitivity to, and engagement in work cultures and its emphasis on peer processes, whereas evidence-based early interventions, such as trauma-focused cognitive-behavioral therapy have yet to be shaped according to work cultures (Litz, 2004).

The latest revision of the Cochrane Review, conducted in 2010, has neither included nor addressed this newer study on the intended target group published in 2008 (Adler et al., 2008). On the other hand, the revision did not exclude studies included in the 2002 edition that remained unpublished in 2010 (Dolan and colleagues, unpublished data; Sijbrandij, unpublished data, 2002).

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Hence, the Cochrane Review appears biased in its selection and retention of studies, and this calls for a revision to include the most recent studies (Tuckey & Scott, 2014) to better represent the current research on psychological debriefings.

Implications

Overall, the present assessment of the Review begs the question as to whether content area experts and authors of primary studies should be the ones co-authoring systematic reviews and Cochrane reviews, given the conflict of interest involved. As Ioannidis has put it: “Ideally, people who have no stake in the results should perform systematic reviews and meta-analyses, excluding not only those with financial conflicts of interest but even those who are content experts in the field.” (Ioannidis, 2016, p. 495)

While content area experts may have inside knowledge of unpublished trials and may be familiar with current and emerging directions in their field, many experts write opinionated non-systematic reviews or commentaries (Gøtzsche & Ioannidis, 2012).

The Cochrane Collaboration recognizes that research studies can be biased by their design, analysis, reporting, and interpretation, and the bias may be introduced into systematic reviews by content area experts who co-author them (Higgins & Deeks, 2008). Hence, the Cochrane Conflict of Interest policy declares that relevant authorship of the primary studies should be disclosed in Cochrane’s disclosure of potential conflicts of interest form (Tovey, Foxlee, & MacLehose, 2015). The current policy also includes a regulation that says,

“Authors of primary studies should not extract data from their own study or studies. Instead, another author(s) or an editor(s) should extract these data, and check the interpretation against the study report and any available study registration details or protocol.” (Tovey, et al. 2015, p. 1)

However, this protocol appears to have a loophole, as co-authors with similar agendas may choose to collaborate on a review and can extract data from each other’s primary studies. Hence, while clear policies are in place for commercial and financial conflict of interest, there is a need for the Cochrane Collaboration to update the Cochrane Conflict of Interest policy to include regulations on academic conflicts and researcher allegiance.

Conclusion

Cochrane reviews are viewed as a benchmark for the assessment of (medical) intervention efficacy. It is

tremendously well-regarded in academia, such that it can influence to make or break a new intervention. This assessment of the Cochrane Review (Rose et al., 2002) on “Psychological debriefing for preventing post-traumatic stress disorder” evaluated whether the studies included in it adhered to CISD/PD as an intervention. It was found that 14 out of 15 studies in the Review were conducted on individuals (civilian victims of direct trauma) rather than on groups of emergency personnel (to address their secondary work-related distress) for which CISD/PD was specifically developed. Hence violating the first principle of integrity of interventions, adherence, as per the Cochrane Handbook. More than half of the studies included in the Review also implemented PD later than the 48-72-hour timeframe that the intervention prescribes, thus violating the exposure of the intervention, the second integrity of interventions. At least three studies have been found to have questionable training of professionals delivering the intervention, hence violating the third aspect; quality of delivery. Finally, all the studies in the Review were limited to single session interventions with no follow-up scheduled, even though CISM should include both pre-and post-incident follow-up procedures and referrals. Furthermore, two studies included in the Cochrane Review do not evaluate the framework of CISD/PD at all, instead, test entirely different crisis intervention and efficacy of brief counselling sessions. These are clear violations of the fifth integrity of interventions, Program Differentiation.

Finally, the Review focuses solely on one aim of PD, preventing PTSD, and thus overlooks the second aim of PD; the promotion of recovery and acceleration of return to normal functioning and its function as a screening tool for participants who may require further individual help. The Review neither discusses, nor includes studies that address part of the intervention that brings out the group cohesion facilitation as a part of furthering recovery among emergency workers; an aspect that is integral to this work culture (Murphy et al., 1994; Neale, 1991), since the group interventions were conducted individually, on direct trauma victims. Hence, the many shortcomings of Cochrane Review identified in the current assessment indicate that psychological debriefing has not been properly evaluated as an early group crisis intervention and call onto question the validity of the conclusions reached in the Review.

It just may be that psychological debriefing has been dismissed too quickly as an early group crisis intervention mechanism. Hence it is vital to address its effectiveness in future investigations. The conclusion indicates that the intervention is at least worth being reassessed when implemented on its intended target population—group of emergency personnel and first responders.

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- Ethical approval - N/A
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- Registry and the Registration No. of the study/Trial - N/A
- Animal Studies - N/A
- Conflict of Interest - No conflict of interest exists for all the co-authors.

References:

- Adler, A. B., Litz, B. T., Castro, C. A., Suvak, M., Thomas, J. L., Burrell, L., . . . Bliese, P. D. (2008). A group randomized trial of critical incident stress debriefing provided to US peacekeepers. *Journal of Traumatic stress, 21*(3), 253-263.
- Alexander, D. A., & Klein, S. (2001). Ambulance personnel and critical incidents: impact of accident and emergency work on mental health and emotional well-being. *The British Journal of Psychiatry, 178*(1), 76-81.
- Arendt, M., & Elklit, A. (2001). Effectiveness of psychological debriefing. *Acta Psychiatrica Scandinavica, 104*(6), 423-437.
- Bisson, J. I., & Deahl, M. P. (1994). Psychological debriefing and prevention of post-traumatic stress. *British Journal of Psychiatry, 165*, 717-720.
- Bisson, J. I., Jenkins, P. L., Alexander, J., & Bannister, C. (1997). Randomised controlled trial of psychological debriefing for victims of acute burn trauma. *The British Journal of Psychiatry, 171*(1), 78-81. doi:10.1192/bjp.171.1.78
- Bohl, N. (1991). The effectiveness of brief psychological interventions in police officers after critical incidents (pp. 31-38). *Critical Incidents in Policing, Revised. Washington, DC: Department of Justice.*
- Bordow, S., & Porritt, D. (1979). An experimental evaluation of crisis intervention. *Social Science & Medicine. Part A: Medical Psychology & Medical Sociology, 13*, 251-256.
- Bunn, T. A., & Clarke, A. M. (1979). Crisis intervention: An experimental study of the effects of a brief period of counselling on the anxiety of relatives of seriously injured or ill hospital patients. *British Journal of Medical Psychology, 52*(2), 191-195.
- Carlier, I. V. E., Lamberts, R. D., & Gersons, B. P. R. (1997). Risk Factors for Posttraumatic Stress Symptomatology in Police Officers: A Prospective Analysis. *The Journal of Nervous and Mental Disease, 185*(8), 498-506.
- Castro, C., & Adler A. B. (2011) Reconceptualizing combat-related posttraumatic stress disorder as an occupational hazard. In Adler, A. B. (Ed.), *Deployment psychology: Evidence-based strategies to promote mental health in the military* (pp. 217-242). Washington, DC, US: American Psychological Association. <http://dx.doi.org/10.1037/12300-009>
- Conlon, L., Fahy, T. J., & Conroy, R. (1999). PTSD in ambulant RTA victims: A randomized controlled trial of debriefing. *Journal of psychosomatic research, 46*(1), 37-44.
- Creamer, M. C., Varker, T., Bisson, J., Darte, K., Greenberg, N., Lau, W., . . . Ruzek, J. (2012). Guidelines for peer support in high-risk organizations: An international consensus study using the delphi method. *Journal of Traumatic stress, 25*(2), 134-141.
- Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control? *Clinical psychology review, 18*(1), 23-45.
- Davidson, L., Chinman, M., Kloos, B., Weingarten, R., Stayner, D., & Tebes, J. K. (1999). Peer support among individuals with severe mental illness: A review of the evidence. *Clinical psychology: Science and practice, 6*(2), 165-187.
- Dyregrov, A. (1989). Caring for helpers in disaster situations: Psychological debriefing. *Disaster management, 2*(1), 25-30.
- Dyregrov, A., (1997). The process in psychological debriefings. *Journal of Traumatic stress, 10*(4), 589-605.
- Everly, G. S., Boyle, S. H., & Lating, J. M. (1999). The effectiveness of psychological debriefing with vicarious trauma: a meta-analysis. *Stress Medicine, 15*(4), 229-233.

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- Everly, G. S., Flannery Jr, R. B., & Mitchell, J. T. (2000). Critical incident stress management (CISM): A review of the literature. *Aggression and Violent Behavior, 5*(1), 23-40.
- Everly, G. S., & Mitchell, J. T. (1999). *Critical incident stress management-CISM-: a new era and standard of care in crisis intervention*: Chevron Pub.
- Froland, C., Brodsky, G., Olson, M., & Stewart, L. (2000). Social support and social adjustment: Implications for mental health professionals. *Community Mental Health Journal, 36*(1), 61-75.
- Graf, F. A. (1986). The relationship between social support and occupational stress among police officers. *Journal of Police Science & Administration*.
- Gøtzsche, P. C., & Ioannidis, J. P. (2012). Content area experts as authors: helpful or harmful for systematic reviews and meta-analyses? *BMj, 345*, e7031.
- Hartsough, D. M., & Myers, D. G. (1985). Disaster work and mental health: Prevention and control of stress among workers.
- Higgins, J. P., & Deeks, J. J. (2008). Selecting studies and collecting data. *Cochrane Handbook for Systematic Reviews of Interventions: Cochrane Book Series, 151-185*.
- Hobbs, M., Mayou, R., Harrison, B., & Worlock, P. (1996). A randomised controlled trial of psychological debriefing for victims of road traffic accidents. *Bmj, 313*(7070), 1438-1439.
- Humphreys, K., & Rappaport, J. (1994). Researching self-help/mutual aid groups and organizations: Many roads, one journey. *Applied and Preventive Psychology, 3*(4), 217-231.
- Ioannidis, J. P. (2016). The mass production of redundant, misleading, and conflicted systematic reviews and meta-analyses. *The Milbank Quarterly, 94*(3), 485-514.
- Jenkins, S. R. (1996). Social support and debriefing efficacy among emergency medical workers after a mass shooting incident. *Journal of Social Behavior & Personality, 11*(3), 477-492.
- Kaufmann, G. M., & Beehr, T. A. (1989). Occupational stressors, individual strains, and social supports among police officers. *Human Relations, 42*(2), 185-197.
- Kirkcaldy, B. D., & Furnham, A. F. (1995). Coping, seeking social support and stress among German police officers. *European Review of Applied Psychology/Revue Européenne de Psychologie Appliquée*.
- Lavender, T. & Walkinshaw, S. A. (1998). Can midwives reduce postpartum psychological morbidity? A randomized trial. *Birth, 25*(4), 215-219.
- Lee, C., Slade, P., & Lygo, V. (1996). The influence of psychological debriefing on emotional adaptation in women following early miscarriage: a preliminary study. *British Journal of Medical Psychology, 69*(1), 47-58.
- Leonard, R., & Alison, L. (1999). Critical incident stress debriefing and its effects on coping strategies and anger in a sample of Australian police officers involved in shooting incidents. *Work & Stress, 13*(2), 144-161.
- Litz, B. T. (2004). *Early intervention for trauma and traumatic loss*: Guilford Press.
- Mitchell, J. T. (1983). When disaster strikes: The critical incident stress debriefing process *Journal of emergency medical services* (pp. 36-39).
- Mitchell, J. T., & Everly, G. S. (1986). Critical incident stress management. *Response, September/ October, 24-25*.
- Mitchell, J. T., & Everly, G. S. (1997). Critical incident stress debriefing (CISD). *An Operations Manual for the Prevention of Traumatic Stress Among Emergency Service and Disaster Workers. Second Edition, Revised. Ellicott City: Chevron Publishing Corporation*.
- Murphy, S. A., Beaton, R. D., Pike, K. C., & Cain, K. C. (1994). Firefighters and paramedics: years of service, job aspirations, and burnout. *AAOHN Journal, 42*(11), 534-540.
- Neale, A. V. (1991). Work stress in emergency medical technicians. *Journal of occupational medicine.: official publication of the Industrial Medical Association, 33*(9), 991-997.
- Neylan, T. C., Metzler, T. J., Best, S. R., Weiss, D. S., Fagan, J. A., Liberman, A., . . . Marmar, C. R. (2002). Critical Incident Exposure and Sleep Quality in Police Officers. *Psychosomatic Medicine, 64*(2), 345-352.
- North, C. S., Tivis, L., McMillen, J. C., Pfefferbaum, B., Cox, J., Spitznagel, E. L., . . . Smith, E. M. (2002). Coping, functioning, and adjustment of rescue workers after the Oklahoma City bombing. *J Trauma Stress, 15*(3), 171-175. doi:10.1023/A:1015286909111
- Patterson, G. T. (1999). Coping effectiveness and occupational stress in police officers. In J. M. Violanti & D. Paton (Eds.), *Police trauma: Psychological aftermath of civilian combat* (pp. 214-226). Springfield, IL, US: Charles C Thomas Publisher.
- Priest, S. R., Henderson, J., Evans, S. F., & Hagan, R. (2003). Stress debriefing after childbirth: a randomised controlled trial. *Medical journal of Australia, 178*(11), 542-545.

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- Raphael, B., & Meldrum, L. (1995). Does debriefing after psychological trauma work? *BMj*, *310*(6993), 1479.
- Robinson, R. C., & Mitchell, J. T. (1993). Evaluation of psychological debriefings. *Journal of Traumatic stress*, *6*(3), 367-382.
- Rose, S., Brewin, C. R., Andrews, B., & Kirk, M. (1999). A randomized controlled trial of individual psychological debriefing for victims of violent crime. *Psychological Medicine*, *29*(4), 793-799.
- Rose, S. C., Bisson, J., Churchill, R., Wessely, S., & Rose, S. C. (2002). Psychological debriefing for preventing post traumatic stress disorder (PTSD). doi:10.1002/14651858.cd000560
- Shalev, A. Y., Peri, T., Rogel-Fuchs, Y., Ursano, R. J., & Marlowe, D. (1998). Historical group debriefing after combat exposure. *Military Medicine*.
- Small, R., Lumley, J., Donohue, L., Potter, A., & Waldenström, U. (2000). Randomised controlled trial of midwife led debriefing to reduce maternal depression after operative childbirth. *BMj*, *321*(7268), 1043-1047.
- Stephens, C., Long, N., & Miller, I. (1997). The impact of trauma and social support on posttraumatic stress disorder: A study of New Zealand police officers. *Journal of Criminal Justice*, *25*(4), 303-314.
- Tovey, D., Foxlee, R. & MacLehose, H. . (2015). Implementing the conflict of interest policy in practice. Retrieved from <http://community.cochrane.org/editorial-and-publishing-policy-resource/ethical-considerations/conflicts-interest-and-cochrane-reviews/implementing-conflict-interest-policy-practice>
- Tuckey, M. R., & Scott, J. E. (2014). Group critical incident stress debriefing with emergency services personnel: a randomized controlled trial. *Anxiety, Stress & Coping*, *27*(1), 38-54.

Appendix

Table 1 Principles of Integrity of Interventions Programs

1. The extent to which specific intervention components were delivered as prescribed (adherence)
2. Number, length and frequency of implementation of intervention components (exposure)
3. Qualitative aspects of the intervention delivery that are not directly related to the implementation of the prescribed content, such as implementer enthusiasm, training of implementers, global estimates of session effectiveness, and leaders' attitude towards the intervention (quality of delivery)
4. Measures of participant response to the intervention, which may include indicators such as levels of participation and enthusiasm (participant responsiveness)
5. Safeguard checks against the diffusion of treatments, that is, to ensure that the subjects in each experimental group received only the planned interventions (program differentiation)

reproduced from Dane and Schneider (1998)