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**The short term effectiveness of
critical incident stress debriefing**

Colm L. Humphries

&

Alan Carr

Psychology Department, University College Dublin

Abbreviated Title: CISD

Submitted in April 2000, revised and resubmitted in October 2001 to: Professor Ken Brown & Dr Carol McGuinness, Irish Journal of Psychology, School of Psychology, Queen's University Belfast, Belfast, BT7 1NN.

Correspondence address: Dr Alan Carr, Department of Psychology, Room 232, Science Building, University College Dublin, Belfield, Dublin 4.

email: alan.carr@ucd.ie: Phone: +353-1-7062390.

The aim of the study was to evaluate the immediate impact of Critical Incident Stress Debriefing (CISD) on people who had recently experienced a stressful event. Post traumatic symptoms were evaluated with the Impact of Events Scale (IES) before CISD and again six weeks later and were compared to those of controls and a group who had received a brief psychoeducational intervention, who were evaluated within the same time frame. Compared with controls, significant effects for the CISD condition and a brief psychoeducational intervention were observed on the intrusions and total scales of the IES. CISD is effective in the short-term in reducing post-traumatic stress symptomatology, notably intrusive memories, following a critical incident. However CISD is no more effective than a brief psychoeducational intervention. CISD does not increase post traumatic stress symptomatology.

Key Words: CISD, IES, Debriefing, .

Word Count: 2,800 words

This study examined the short-term effectiveness of Critical Incident Stress Debriefing (CISD, Mitchell, 1983) in alleviating stress responses of people exposed to traumatic events such as armed robbery or managing major medical emergencies involving death or extensive injury. Acute stress reactions and post traumatic stress disorder (PTSD) are the principal psychological disorders that occur following exposure to actual or potentially life-threatening events involving the self or others (APA, 1994; WHO, 1992). Both conditions are characterized by intrusive memories of the stressful event coupled with attempts to psychologically avoid or suppress these distressing intrusions. Acute stress reactions are short-lived and subside within a month, whereas PTSD persists beyond a month's duration. Over a third of cases exposed to traumatic events such as violent robbery or dealing with severe medical emergencies involving significant injury or death develop PTSD (Wessely, Rose & Bisson, 1998).

Intrusions that typify acute stress reactions and PTSD probably reflect a difficulty in processing traumatic memories and encoding them appropriately (Van Der Kolk, McFarlane, & Weiseth, 1999). The strategies adopted by individuals suffering from acute stress reactions and PTSD to avoid or suppress intrusions may inhibit rather than facilitate the processing of traumatic memories. Effective psychological treatments for PTSD and acute stress reactions all involve exposure to distressing memories of traumatic events until anxiety subsides, while concurrently offering support and preventing the use of avoidance strategies during the exposure process (Foa & Meadows, 1997; Keane, 1998).

Critical Incident Stress Debriefing (CISD) is a preventative intervention which aims to facilitate the processing of traumatic memories immediately after a major trauma and so prevent the development of acute stress reactions and PTSD (Wessely et al. 1998). CISD, first formulated by Mitchell (1983, 1988), is a process facilitated by a team including professional support personnel, such as mental health professionals, and peer support personnel, such as specially trained emergency service workers (Mitchell & Everly, 1995). CISD is part of an overall management strategy for dealing with trauma which is offered within 24-72 hours of a critical incident to groups of up to 15 participants. CISD involves 7 distinct stages (Gibson, 1998):

1. Introduction stage
2. Fact stage
3. Thought stage
4. Reaction stage
5. Symptoms stage
6. Teaching stage
7. Re-Entry stage.

In the *Introduction Stage* the leader establishes an authoritative bond with the group, states the objectives of the meeting, and invites participants to become involved in the confidential debriefing process. During the *Fact Stage* participants are invited to outline the facts of the critical incident. A chronology of events is

clarified and the roles of participants during the critical incident are established. Within the *Thought Stage* of CISD participants are invited to describe their 'first thought' during the incident and the differing personal appraisals of all participants of the critical incident are clarified. During the *Reaction Stage* participants describe their emotional reactions and sensory experiences, images and impressions during the critical incident. This process commonly involves emotional ventilation and this promotes group cohesion and support. During the *Symptom Stage* participants are invited to describe cognitive, emotional, physical or behavioral symptoms that they have experienced since the critical incident. Coping skills, including relaxation exercises, managing intrusive memories and mobilizing social support are considered during the *Teaching Stage*. In the final *Re-Entry Stage* outstanding questions are addressed, lessons learned from the debriefing process are summarized and transition to the normal environment is facilitated, often through informal rituals such as sharing light refreshments.

Reviews of studies of the effectiveness of CISD conclude that the evidence is equivocal (e.g. Wessely et al, 1998). Studies of CISD that have failed to support its effectiveness have included emergency personnel involved in an earthquake (Kenardy et al, 1996); road traffic accident victims (Hobbs, Mayou, Harrison & Worlock, 1996); and patients with severe burns (Bisson, Jenkins, Alexander & Bannister, 1997). Positive effects for CISD have been found in studies of post-combat soldiers (Busuttil et al, 1995) and emergency medical workers after a mass shooting incident (Jenkins, 1996). All studies of CISD conducted to date have methodological shortcomings. These have included the use of non-manualized intervention protocols; the use of untrained facilitators; and application to inappropriate populations (e.g. burn victims).

CISD is not without its critics (Dyregrov, 1999; Rick, 2000). Rick (2000) argues that CISD, which involves remembering and re-experiencing aspects of the traumatic incident, may lead to secondary traumatization. Implicit in such criticisms of CISD is the view that simple psychoeducational interventions which give information about stress reactions and their management but do not entail recalling of traumatic memories or re-experiencing traumatic emotional responses should be more effective than CISD.

The present study aimed to evaluate the effectiveness of CISD and in particular to address the following questions:

1. Do people who participate in CISD show a greater reduction in stress responses following a critical incident than people who receive no intervention whatsoever?
2. Do people who participate in CISD show a greater reduction in stress responses following a critical incident than people who receive a simple psychoeducational intervention?

METHOD

Design

A 3 x 2 (intervention x time) mixed model design was used to evaluate the short-term effectiveness of CISD following exposure to a critical incident. Participants were allocated to one of three conditions: (1) critical incident stress debriefing (CISD), (2) a psychoeducational stress lecture (SL), or (3) a no intervention control condition. All participants were evaluated shortly after the critical incident but before intervention (Time 1) and again six weeks later (Time 2).

Participants

There were 48 participants in this study, 18 (38%) males and 30 (63%) females. The mean age was 36 years (SD = 11.26). All participants in the study had been exposed to critical incidents such as violent, armed robbery or the management of major emergencies in hospitals involving death or extreme life-threatening injuries. Participants were drawn from the financial services or retail sector (28, 58%) and hospital emergency departments (20, 42%).

From Table 1 it may be seen that the intervention and control groups were not matched for age, gender or work setting. The control group was younger than the CISD group; contained more females than the intervention groups; and contained participants who were drawn exclusively from hospital emergency work settings.

Instruments

The Impact of Event Scale (IES, Horowitz, Wilner & Alvarez, 1979), a 15-item self-report inventory which evaluates reactions to traumatic events was used in this study. Participants were asked to name the traumatic event or critical incident which had recently occurred and then to respond to items to indicate their experiences over the preceding 7 days. For each item respondents indicated the frequency of its occurrence on Likert scales from 0='not at all' to 3='often'. The IES yields a total score in addition to scores on intrusion and avoidance subscales. The reliability of the IES has been well established (Horowitz et al, 1979). In the present study good internal consistency reliability for the IES was found. Cronbach's alphas for total, intrusion and avoidance IES scales at Times 1 and 2 were all above .8.

Procedure

Major teaching hospitals in central Dublin and financial and retail agencies associated with Staff Care Services at South and East Belfast Healthcare Trust referred participants to the study. Participants were assigned to CISD, SL or control conditions depending on availability of staff to offer the two intervention programmes. Immediately following referral participants completed a consent form and the IES. They also completed the IES 6 weeks later and returned it by mail. Those assigned to the CISD condition were facilitated through the seven stage CISD process described above. To ensure treatment integrity all

facilitators followed the Gibson's (1998) CISD Manual and all had completed CISD training in this specific approach (Gibson 1998). Participants assigned to the SL condition were given a short psychoeducational lecture on typical reactions to stressful events (Lazarus, 1966). In both the CISD and SL conditions, participants were given a helpline phone number and written self-help guidelines. They were also contacted by phone within a week to evaluate progress and offer support. Participants in the control group received no intervention, helpline number, information sheet or follow-up phonecall.

RESULTS

The Total, Intrusion and Avoidance scales of the IES were each analyzed with 3 x 2 (Intervention X Time) mixed model ANOVAs. In each of these ANOVAs, there were three levels of the between subjects factor - Intervention - (Critical Incident Stress Debriefing; Stress Lecture; Control) and two levels of the within subjects factor - Time - (Time 1 and Time 2). Results for the three ANOVAs along with means and standard deviations are presented in Table 2. Significant Intervention x Time interactions occurred on the Total IES scale ($F= 4.4$; $df = 2,45$; $p<.05$) and the Intrusion IES subscale ($F= 6.4$; $df = 2,45$; $p<.05$) but not on the avoidance subscale of the IES. These significant interactions indicate, in each instance, that the improvements in stress responses which occurred from Time 1 to Time 2 differed across conditions. From the graphs of these interactions presented in Figure 1, it may be seen that while all three Time 2 mean scores are lower than those at Time 1, the greatest reduction in IES scores occurred in the CISD or SL conditions. On the total IES scale Time 2 means for the CISD and SL groups differed significantly from that of the control group but the means of the two intervention groups at Time 2 did not differ significantly from each other.

When effect sizes for CISD and SL were calculated using mean scores at Time 2 on the IES total scale, the effect size for the CSID group was .6 and that for the SL group was .4. These effect sizes indicate that the average participant in the CISD group fared better 6 weeks after the intervention than 73 % of untreated controls, while the average participant in the SL group fared better 6 weeks after the intervention than 66% of untreated controls.

DISCUSSION

In answer to the first question addressed in this study, it is clear that participants in CISD showed a greater reduction in stress responses following a critical incident than members of the control group who receive no intervention whatsoever. In answer to the second question, no evidence was found in this study to indicate that a simple psychoeducational intervention - a Stress Lecture - was more effective or led to less distress than CISD. Both CISD and the psychoeducational stress lecture led to similar reductions in stress responses on the IES.

An important question concerns the confidence we can place in these results given the study's methodological shortcomings. The lack of random assignment of participants to groups, demographic differences between groups, and small numbers of cases in each group are three of the main shortcomings of this study deserving particular mention.

First, the lack of random assignment of cases to groups may have biased some groups to be more or less responsive to treatment than others. Inspection of the IES total scale means at Time 1 show that (in round numbers) the mean of the SL group (22) was higher than that of the CISD group (18) and the control group (19). Thus, it may have been the case that the SL group were more distressed than the other groups and so less responsive to treatment.

Second, intervention and control groups were not matched for age, gender or work setting. The control group was younger than the CISD group; contained more females than the intervention groups; and contained participants who were drawn exclusively from hospital emergency work settings. Perhaps being younger and containing more females rendered them more vulnerable to stress.

Third, the small number of participants included in the study set limits on the power of the analyses conducted to detect statistically significant differences. Inspection of group means and effect sizes suggests that the outcome for the CISD group may have been significantly better than that for the SL group, had larger numbers of participants been included in the study.

In light of these methodological weaknesses, we are confident that we have provided evidence to show that CISD is more effective than no treatment; is as effective as a brief psychoeducational intervention; and does not lead to short term secondary traumatization.

However, we suspect that a study with the same basic design involving larger numbers (n=100 per cell) and random assignment of demographically matched triads to conditions would reveal that CISD is more effective than psychoeducation in alleviating the short term impact of traumatic events such as bank robberies or managing stressful hospital emergencies. Such a study is urgently needed to further clarify the effectiveness of CISD.

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Table 1. Demographic characteristics

		Critical Incident Stress Debriefing (N=24)	Stress Lecture (N=14)	Control (N=10)
Age	M	38.91	34.28	32.30
	SD	9.23	9.23	11.08
Gender	Male	10 42%	8 57%	2 20%
	Female	14 58%	6 43%	8 80%
Work setting	Hospita l	6 25%	4 29%	10 100%
	Financi al or Retail	14 75%	10 71%	0 0%

Table 2. Changes in impact of event scale scores from Time 1 to Time 2

IES Scale		Critical Incident Stress Debriefing (N=24)		Stress Lecture (N=14)		Control (N=10)		ANOVA effects		
		Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Intervention	Time	Intervention x Time
IES Total scale	M	17.75	3.08	22.21	5.07	18.79	9.60	1.01	114.22**	4.37*
	SD	7.31	3.18	10.13	6.19	8.90	11.29			
IES Intrusion scale	M	9.71	2.01	12.35	2.86	8.00	4.80	9.92	104.95**	6.4*
	SD	4.01	1.69	6.91	2.98	6.69	4.49			
IES Avoidance scale	M	8.04	1.08	9.85	2.21	8.50	4.10	1.03	64.04*	1.26
	SD	4.53	1.97	4.66	3.64	5.16	4.05			

Note: *p< .05

Figure 1. Changes on the Impact of Events Scale at time 1 and time 2.

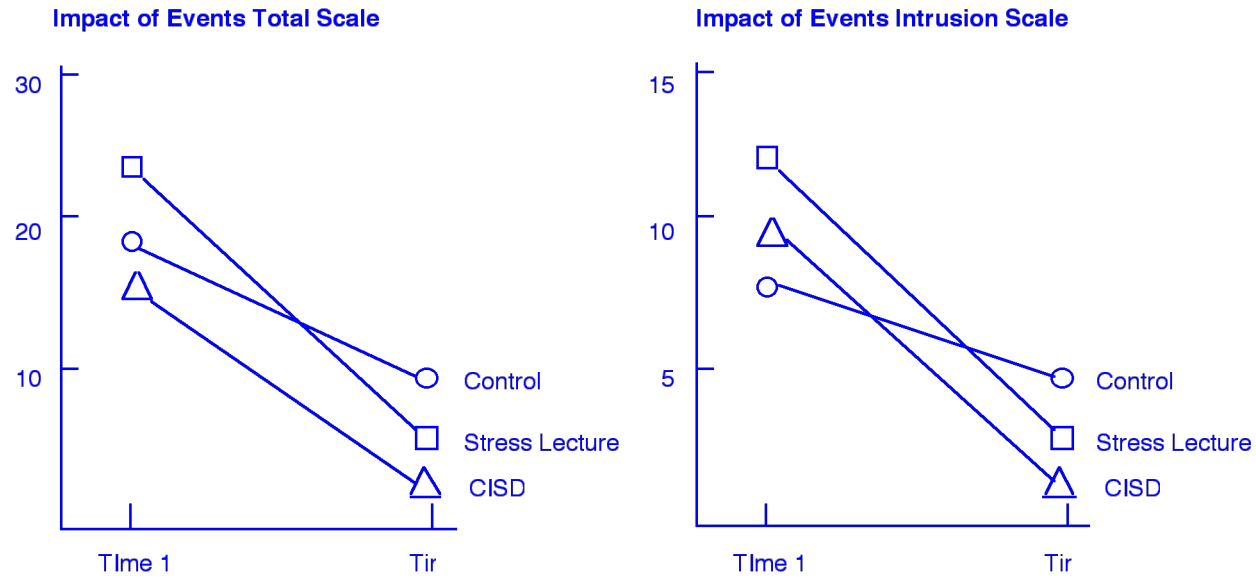


Figure 1. Changes on the Impact of Events Scale at time 1 and time 2.

