Research paper

Treatment of acute stress disorder for victims of violent crime

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ABSTRACT

Background: Victims of violent crime are at elevated risk of developing acute stress disorder (ASD) as well as subsequent post-traumatic stress disorder (PTSD), both of which are linked to severe psychological distress. The aim of this 12-month prospective study was to evaluate the efficacy of cognitive-behavioral therapy (CBT) vs. cognitive-behavioral therapy with a significant other (CBT-SO), relative to usual care (UC), for the improvement of post-traumatic, depression and anxiety symptoms and the prevention of PTSD among victims of violent crime with ASD.
Methods: A total of 166 victims of violent crime with ASD were assigned to CBT (n = 54), CBT-SO (n = 52) or UC (n = 60). Self-report assessments and diagnostic interviews were completed at pre-treatment and post-treatment as well as at 6-month and 12-month follow-ups.
Results: CBT and CBT-SO participants had fewer depression symptoms than those in the UC group up to 12 months post-event. Significantly fewer participants in the CBT condition met criteria for PTSD than in the UC group up to 12 months post-event. The CBT group did not differ from the CBT-SO group on any variable at any assessment time.
Limitations: Findings must be interpreted in light of the quasi-experimental nature of the study and limitations concerning the management of missing data.
Conclusions: Further research is warranted in order to assess whether more extensive involvement of a significant other in therapy may lead to better outcomes for victims of violent crime with ASD.

1. Introduction

Criminal victimization is the most common traumatic event to which the general population is exposed (Breslau et al., 1998). Indeed, 6% of the Canadian population aged 15 and over reports being victimized by a violent crime in a given year (Statistics Canada, 2010). Victims of violent crime (VCC) often suffer from negative mental health outcomes that may be exacerbated by certain aspects of violent criminal victimization, such as the experience of a threat to one's life or physical integrity, stigma related to the crime, loss of interpersonal trust, and involvement in the judicial process (Green & Roberts, 2008; O' Hara, 2012).

Several prospective studies among victims of crime indicate that between 19% and 33% of exposed individuals develop acute stress disorder (ASD; Brewin et al., 1999; Classen et al., 1998; Elklit, 2002; Elklit & Brink, 2004). Research and clinical experience have shown that an ASD diagnosis, either at a clinical or subclinical level, is a powerful risk factor for the development of post-traumatic stress disorder (PTSD),

with up to 89% of VVC with ASD developing PTSD afterwards (Elklit & Brink, 2004; Guay et al., 2016). PTSD is associated with a reduction in quality of life (American Psychiatric Association, 2013; Magruder et al., 2004) as well as depression and anxiety symptomatology (Johansen et al., 2006). It therefore appears crucial to provide early and efficacious therapeutic intervention to VVC with ASD in order to minimize their risk of developing long-term psychological sequelae such as PTSD, depression and anxiety.

Studies generally conclude that early and brief CBT, administered in the weeks following a traumatic event, is efficacious in minimizing post-traumatic reactions and preventing PTSD (International Society for Traumatic Stress Studies, 2009). However, relatively scant literature regarding the efficacy of early and brief CBT among VVC suggests that this intervention may only be superior to control conditions in the short-term, with significant differences withering away in the months that follow (Foa et al., 2006; Sijbrandij et al., 2007). Further prospective research examining the efficacy of early and brief CBT for VVC is therefore needed.

Several empirical studies and etiological models of PTSD suggest that positive or negative social support can be an important protective or risk factor for the development and maintenance of PTSD (Andrews et al., 2003; Billette et al., 2005; Guay et al., 2006; Yap & Devilly, 2004). Yet, no form of early and brief CBT aimed at preventing PTSD among individuals with ASD systematically includes an intervention that can improve the support of loved ones. Pilot studies conducted by our team indicate that integrating a brief intervention with the spouse, aimed at improving their understanding of post-traumatic stress and the quality of their support, may increase the effectiveness of CBT for the reduction of post-traumatic symptoms and the improvement of perceived support among victims with PTSD (Billette et al., 2008; Guay et al., 2004). These results suggest that the involvement of a significant other in early and brief CBT (CBT-SO) may also potentially bolster the recovery of VVC.

1.1. Aims of the study

The primary goal of this 12-month prospective study was to determine the efficacy of early and brief CBT vs. CBT-SO, relative to usual care (UC), for the improvement of post-traumatic symptomatology as well as depression and anxiety symptoms among VVC with clinical or subclinical ASD. The secondary goal was to evaluate the efficacy of early and brief CBT vs. CBT-SO, relative to UC, for the prevention of a PTSD diagnosis among VVC with clinical or subclinical ASD.

2. Methods

2.1. Patients

Participants were VVC (i.e., direct victims or witnesses of physical assault, sexual assault, robbery, and murder) recruited by the Trauma Studies Center (TSC) of the Institut universitaire en santé mentale de Montréal (IUSMM) between 2009 and 2014. Individuals were referred to the TSC via the Crime Victims Assistance Centers of Montreal who offer front-line support to victims following a violent crime. To be included, referred individuals had to have been victimized by a violent crime in the past 25 days, be between the ages of 18 and 75, be able to communicate in English or French, and present with clinical or subclinical ASD. Exclusion criteria were traumatic brain injury, organic brain syndrome, suicidal risk, current bipolar disorder and past or current psychosis. Participants included in the CBT and CBT-SO conditions were not allowed to take part in other treatment during the study. Screening for these exclusion criteria was conducted through a telephone interview with the research coordinator. The presence of an ASD diagnosis was established at the pre-treatment assessment. Participants provided written informed consent approved by the research ethics board of IUSMM. Different consent forms were provided for each of the three study groups (i.e., CBT, CBT-SO, and UC) and participants were not made aware of the existence of different study conditions. Participants received a compensation of 20$ for each completed assessment. The characteristics of the sample are presented in Table 1. Participants were similar across conditions, with the exception of education and income being lower in the UC condition. Power analyses suggested that, after accounting for the expected loss of 25% of participants based on previous studies with analogous populations (Andrews et al., 2003; Rose et al., 1999), 52 participants per condition were required to conduct the present study, for a total of 156 VVC with clinical or subclinical ASD. This sample size is sufficient to achieve an 80% probability of detecting a medium effect size an alpha of 0.05 (F critical value (2,153) = 3.0552; Paul & Erdfelder, 1992).

2.2. Measures

2.2.1. Diagnostic interviews

ASD was evaluated using the Acute Stress Disorder Interview (ASDI)

Table 1
Participant characteristics.

Characteristic	CBT	CBT-SO	UC	Test	P Value
Age, mean (SD)	39.6 (13.4)	39.1 (12.7)	40.0 (14.6)	$F_{165} = 0.21$	.81
Sex, No. (%)					
Male	24 (44)	18 (35)	26 (43)	$X^2 = 1.28$	.53
Female	30 (56)	34 (65)	34 (57)		
Single, No. (%)	38 (70)	29 (57)	39 (65)	$X^2 = 2.11$	.35
Employed, No. (%)	22 (41)	17 (33)	21 (35)	$X^2 = 0.80$	.67
Education, No. (%)					
High school or less	38 (70)	25 (48)	44 (73)	$X^2 = 8.98$	.01
Higher education	16 (30)	27 (52)	16 (27)		
Income, No. (%)					
≤ 29,999$	28 (53)	26 (52)	47 (78)	$X^2 = 10.80$	.01
≥ 30,000$	25 (47)	24 (48)	13 (22)		
Trauma type, No. (%)					
Direct victim	51 (94)	47 (90)	59 (98)	$X^2 = 3.44$	.18
Witness	3 (6)	5 (10)	1 (2)		
ASD, No. (%)					
Clinical	34 (63)	24 (46)	40 (67)	$X^2 = 5.36$	.07
Subclinical	20 (37)	28 (54)	20 (33)		
SPS, total score (SD)	75.7 (9.8)	77.7 (10.6)	73.1 (9.5)	$F_{139} = 2.44$	.09

Abbreviations: ASD, acute stress disorder; CBT, cognitive behavioral therapy; CBT-SO, cognitive behavioral therapy with significant other; SPS, Social Provisions Scale; UC, usual care.

at the pre-treatment assessment (Bryant et al., 1998). This semi-structured clinical interview is based on DSM-IV criteria for ASD and contains 19 dichotomously scored items that relate to ASD symptomatology. This diagnostic interview has high test-retest reliability ($r = 0.95$), sensitivity (92%), and specificity (93%; Bryant et al., 1998). Clinical ASD was diagnosed when all DSM-IV criteria were fulfilled, whereas subclinical ASD was diagnosed when individuals met all criteria except for criteria B, for which only one of out of three dissociative symptoms was required (Elklit & Brink, 2004; Guay et al., 2016). PTSD was evaluated with the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) at post-treatment and at the 6-month and 12-month follow-up assessments (First et al., 1996). A participant was considered to have PTSD when he or she presented with all DSM-IV diagnostic criteria or when all criteria were present with the exception of one (B, C, D or E). The SCID-I has good convergent validity with clinician judgment, ($\kappa = 0.69$) as well as inter-rater reliability ranging from 0.77 to 0.92 (Summerfeldt & Antony, 2002). All assessors were doctoral candidates in psychology.

2.2.2. Self-Report assessments

Depression symptoms were evaluated with the Beck Depression Inventory-II (BDI-II; Beck et al., 1988). This 21-item questionnaire requires respondents to rate symptoms on a 4-point scale in terms of their perceived intensity for the past week, with scores ranging from 0 to 63. The scale has been validated in French (Bouvard & Cottraux, 2010). The Beck Anxiety Inventory (BAI) was utilized to assess the severity of clinical anxiety (Beck et al., 1988). This 21-item questionnaire asks participants to rate how much each symptom has bothered them during the past week on a 4-point scale ranging from "not at all" to "severely", with scores ranging from 0 to 63. The French-Canadian version has high internal consistency ($\alpha = 0.93$) and good test-retest reliability within a four-week interval ($r = 0.63$; Freeston et al., 1994). The Modified PTSD Symptom Scale – Self-report (MPSS-SR) was used to assess the severity and frequency of the 17 PTSD symptoms included in the DSM-IV during the past two weeks (Falsetti et al., 1993). Scores range from 0 to 119, with a total score of 50 and over suggesting clinical post-traumatic symptomatology. The original English and the French-Canadian versions demonstrate excellent internal consistency ($\alpha = 0.92$–0.97;