

A Review of Trauma-Informed Treatment for Adolescents

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Experiencing trauma as a child or youth often has a variety of serious repercussions that have the potential to follow an individual into adulthood. These may include experiencing difficulties in key areas of functioning such as academic achievement and social interactions, the development of posttraumatic stress disorder (PTSD), or coming into contact with the criminal justice system. Unfortunately, it is estimated that approximately 1 in 4 youth will experience some type of substantive trauma during his or her developmental years (Duke, Pettingell, McMorris, & Borowsky, 2010). The current article provides a summary of the main trauma-informed therapies that are currently available for treating adolescents with PTSD or trauma-related symptoms, as well as the therapeutic techniques that are common to all of these main treatments. Further, recommendations are provided concerning trauma-informed therapies that might be most beneficial to employ with adolescents. Implementing therapies that specifically consider a youth's potential exposure to trauma will facilitate a reduction of negative trauma-related symptoms as well as an improvement in life functioning.

Keywords: trauma, adolescents, trauma-informed treatment, PTSD, trauma-focused cognitive behavioural therapy (TF-CBT)

Traumatic events are typically defined as incidents that are perceived as terrifying, shocking, sudden, or that potentially pose a threat to one's life, safety, or personal integrity (Buffington, Dierkhising, & Marsh, 2010; Cohen, Mannarino, & Deblinger, 2010). Examples of traumatic events include being the victim of physical, sexual, or emotional abuse; being a victim of crime; witnessing a crime or abuse in the household; and surviving a natural disaster or a school shooting (Anthony, Lonigan, & Hecht, 1999). While these are some types of trauma, because the experience of trauma is subjective, it would be extremely difficult to delineate the full spectrum of potentially traumatic events. What one individual finds traumatic may not be traumatic to another, but as long as the individual is genuinely traumatized by the experience, he or she may experience the negative effects associated with trauma (Perry, 2001).

Studies in the area of trauma have revealed that many human beings are quite resilient when faced with a traumatic event and do not experience any further aversive effects as a result of the

already-aversive experience (Amaya-Jackson et al., 2003). However, the subset of individuals who do experience the effects of trauma can be detrimentally impacted in a number of ways (Anda et al., 2006; Feeny, Foa, Treadwell, & March, 2004). Factors such as the length of time an individual experienced a particular trauma, as well as its severity, lead to an increased likelihood that the individual will suffer from long-lasting difficulties (Perry, 2001, 2009). As an example, Elklit (2002) determined that the traumatic experiences of physical and sexual abuse, rape, childhood neglect, and attempted suicide were the most likely to result in trauma-related symptoms. While some individuals may experience mild trauma-related effects, or only a small number of symptoms, others may develop posttraumatic stress disorder (PTSD), a chronic and potentially debilitating condition (Amaya-Jackson et al., 2003).

PTSD was originally studied among war veterans and victims of rape, and for a period of time, it was unclear whether children and adolescents were also able to experience symptoms of PTSD or if it would necessarily be equivalent to the experience of adults (Saigh, 1988). A number of studies conducted on trauma-related effects among children and adolescents have now demonstrated that children and adolescents do in fact suffer from PTSD that is consistent with symptomology in adults (Amaya-Jackson & DeRosa, 2007; Anthony et al., 1999; Feeny et al., 2004). For example, Anthony et al. (1999) conducted a study with 5,664 child and adolescent survivors of a natural disaster and found that PTSD was expressed similarly across childhood, adolescence, and adulthood. It should be noted that while full-blown symptoms of PTSD are relatively rare among adolescents, subclinical expressions of PTSD are common among adolescents who have experienced trauma (Copeland, Keeler, Angold, & Costello, 2007; Perry, 2001). Some have suggested that adolescents who have subclinical

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expressions of PTSD are just as likely to experience some of the deleterious effects of trauma as those who have a formal diagnosis (Stathis et al., 2008). Further, some individuals may suffer from a construct similar to PTSD, known as complex PTSD. Complex PTSD shares many symptoms with PTSD but is a distinct construct characterised by developmental difficulties such as structural dissociation, somatic dysregulation, and disorganized attachment patterns (Roth, Newman, Pelcovitz, van der Kolk, & Mandel, 1997; van der Kolk, 2005). Complex PTSD is specifically associated with prolonged trauma at a young age by important individuals in the child's life, such as their caregivers (Ford & Courtois, 2009; van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005).

While PTSD certainly has detrimental effects on adults, children and adolescents are a particularly sensitive population, and experiencing a trauma at a young age may also stunt or permanently alter brain development, arguably affecting them for the rest of their lives (Anda et al., 2006; De Bellis, 2001). For example, Perry (2001) suggests that the area of the brain that is affected by trauma is dependent on the time (both chronological and development-related) that the traumatic experience occurs. He further speculates that the brain may overcompensate for trauma in a particular area of the brain (such as the limbic system) and then develop in a way that is conducive to surviving in a traumatic environment, potentially altering neuronal connections and brain patterns for an extended period of the youth's life (see also Cohen, Perel, De Bellis, Friedman, & Putnam, 2002). Recent mounting evidence suggests that PTSD causes physiological changes in the brain, affecting areas like the amygdala, which plays a role in emotional memories (Francati, Vermetten, & Bremner, 2007), and regulating neurotransmitters, such as serotonin, which is thought to play a role in externalized symptoms such as aggression (Cohen et al., 2002; De Bellis, Hooper, Woolley, & Shenk, 2010). For example, a study conducted by De Bellis (2001) with adolescents who had been neglected as children revealed that these individuals had increased levels of cortisol, a hormone that plays an integral role in the body's stress system, as well as dysregulation of serotonin levels (see also Cohen et al., 2002). Similar research has revealed that children who have experienced trauma early in life are found to have a dysregulation of cortisol, a neurotransmitter that this is associated with less prosocial behaviour and more aggressive behaviour (Alink, Cicchetti, Kim, & Rogosch, 2012; Dozier, Peloso, Lewis, Laurenceau, & Levine, 2008).

Indeed, traumatic experiences can affect both psychological and physical development, which, in turn, may impact an individual's social interactions and academic achievement (Boney-McCoy & Finkelhor, 1995; Margolin & Gordis, 2000; Pfefferbaum, 1997). For example, a study by Beers and De Bellis (2002) with children who were maltreated during their formative years and met diagnostic criteria for PTSD found that the children performed more poorly on attention tasks and had lower levels of executive functioning, were more impulsive, and had poorer long-term memory for verbal information when compared with children who had not been mistreated. Greenfield and Marks (2010) examined a sample of 2,939 noninstitutionalized English-speaking U.S. adults between the ages of 25 and 74 years. Their results indicated that individuals who had suffered psychological violence from either parent had more negative affect and less psychological well-being in adulthood (see also Arata, Langhinrichsen-Rohling, Bowers, & O'Farrill-Swails, 2005). Anda et al. (2006) also conducted a study

examining adverse childhood experiences (ACE) with an adult sample (17,337 participants). Results indicated that adults who had experienced a traumatic event in childhood were much more likely to experience affective disturbances (such as panic reactions and anxiety), somatic disturbances (such as sleep disturbances and obesity), as well as substance abuse, sexual disturbances, high stress, difficulty controlling anger, and intimate partner violence in adulthood (see also Borum, 2003). Trauma-related symptoms may also contribute to overall health problems and habit disorders, such as alcohol or drug addiction (Mulvihill, 2005).

Experiencing a traumatic event and trauma-related effects during childhood has also been associated with delinquent and anti-social behaviour in adolescence and adulthood (Anda et al., 2006; Duke, Pettingell, McMorris, & Borowsky, 2010; Felitti et al., 1998; Grella, Stein, & Greenwell, 2005; Margolin & Gordis, 2000; Mueser, Rosenberg, & Rosenberg, 2009; Yexley, Borowsky, & Ireland, 2002). For example, a study conducted by Duke et al. (2010) found that high-school youth in their large sample who had suffered multiple traumas had a substantially increased risk of violence perpetration. There is also evidence to support the link between experiencing abuse and maltreatment as a child or youth and an increased risk of engaging in self-harm (e.g., Kaplan et al., 1999).

Unfortunately, exposure to trauma among young people is quite common (Cauffman, Feldman, Waterman, & Steiner, 1998). Costello, Erkanli, Fairbank, and Angold (2002) conducted a longitudinal study of mental health with 1,420 children and adolescents aged 9, 11, and 13 years. One out of every four adolescent participants had experienced at least one high magnitude (or extreme) stressor, such as being the victim of abuse or being the cause of harm done to someone else, at some point in their lives. A more detailed examination revealed that 72% of these participants had experienced one extreme stressor, 18% had experienced two extreme stressors, and the remaining 10% had experienced three or more extreme stressors. Interestingly, this study revealed that exposure to one traumatic stressor increased a participant's likelihood of being exposed to another stressor. There have been no epidemiological studies of the prevalence of traumatic experiences and adolescents diagnosed with PTSD in Canada. However, American studies have confirmed that approximately 25% of youth experience some type of extreme adverse event (see also Duke et al., 2010). Both the type and effects of trauma suffered by adolescents may also vary depending on a variety of factors. For example, a study conducted by Elklit (2002) with a sample of 390 Danish 13- to 15-year-olds, revealed that adolescents were more likely to experience indirect trauma (23%), such as learning of the death of a loved one, than direct trauma (17%), such as being the victim of violence. Females (12.3%) were more likely to be diagnosed with PTSD than males (5.6%), and with subclinical PTSD (17.4% vs. 11.2%).

In summary, it is imperative that juveniles who have suffered a trauma and exhibit trauma-related symptoms be treated as quickly and efficiently as possible to reduce the likelihood of any permanent harm (Perry, 2001, 2009). Notably, the full extent of symptoms of trauma may occur immediately after the traumatic event or may lay dormant for years, emerging later on in adolescence or even in adult life (Greenfield & Marks, 2010; Margolin & Gordis, 2000). The purpose of the current article is to provide a compre-

hensive discussion of the trauma-informed treatments currently available for treating adolescents with symptoms of trauma.

Method

An extensive review of the literature was conducted to gather all of the relevant information for this review. The authors primarily used the online databases PsycInfo, PubMed, Academic Search Complete, and Cochrane Reviews, as well as search engines such as Google Scholar and Google. The keywords used to search for articles pertinent to this review of trauma-informed therapy include all possible combinations of the following words: *juvenile, child, youth, adolescent, trauma, traumatic stress, trauma-informed treatment, treatment, therapy, and intervention*. The following inclusion criteria were then used to narrow the focus of study: fully developed therapy programs created specifically for treating trauma-related symptoms, that is, not treatments that simply expanded on general treatment practices and do not address symptoms of trauma as a by-product of another treatment issue; treatments that had the treatment model and instructional guide available; treatments that are specifically designed for use with adolescents (individuals between the age of 12 and 18 years) suffering from PTSD or symptoms of trauma; treatments that had at least one study that had examined the effectiveness of the treatment with adolescents who had experienced at least one traumatic stressor and was experiencing trauma-related symptoms at the time that the treatment was provided; treatments that had at least one study that had examined the effectiveness of treatments for both males and females; and lastly, the articles had to be written in English.

These stringent criteria significantly reduced the number of articles to be reviewed by the authors. The abstracts that remained after the initial cut, based on the criteria outlined here, were reviewed by the first and second authors of this article to determine whether the articles should be read in full. If either of the authors believed the abstract to be potentially relevant, the article was read in full. The authors conducted several rounds of review before deciding on the most pertinent trauma-focused treatments and articles. This extensive search resulted in the inclusion of five main trauma-informed therapies.

Treatments for the Effects of Trauma

There is a vast amount of research conducted on the treatment of trauma-related symptoms for adolescents (Amaya-Jackson et al., 2003; Amstadter, McCart, & Ruggiero, 2007; Farrell, Hains, & Davies, 1998; Feather & Ronan, 2009). However, research into the treatment of PTSD among adolescents is relatively new compared with the research conducted on the symptoms of PTSD and effective treatments for this disorder among adults. Variations of cognitive behavioural therapies (CBT) are the most commonly used treatment methods for PTSD because they have greater empirical support than treatments based on psychodynamic theory and medication (Feeny et al., 2004; Follette & Ruzek, 2006; March, Amaya-Jackson, Murray, & Schulte, 1998; Rosenberg, Jankowski, Fortuna, Rosenberg, & Mueser, 2011). The primary goal of the therapist who implements CBT is to change thoughts and behaviours in an attempt to lessen or eliminate negative psychological symptoms (Follette & Ruzek, 2006; Taylor, 2006). In relation to

treating trauma-related symptoms, there are a number of CBT-like treatments that involve most aspects of the therapy but do not actually present themselves specifically as CBT, such as multimodal trauma treatment (MMTT), as well as different variations of CBT, such as trauma-focused cognitive behavioural therapy (TF-CBT). CBT has been administered to both adults and adolescents (Amstadter et al., 2007; Farrell et al., 1998), whereas MMTT and TF-CBT are trauma-informed treatments developed specifically for use with children and adolescents (Cohen et al., 2010; see Table 1).

Multimodal Trauma Treatment

A treatment that falls under CBT is MMTT, a therapy that claims to adapt CBT strategies that are effective with adults and adjust them for adolescents that experience anxiety and have disruptive behavioural disorders (Amaya-Jackson et al., 2003). This therapy is grounded in the theory that experiencing trauma at a young age disrupts development, and it attempts to use age-appropriate CBT techniques to help the children/adolescents overcome trauma. MMTT is a 14-session group therapy that is most often conducted in a school setting (March, Amaya-Jackson, Murray, & Schulte, 1998). This treatment, based on CBT techniques, includes the use of psychoeducation, narrative (writing in a journal about the trauma), exposure to memories of the trauma, relaxation techniques, and cognitive restructuring (Amaya-Jackson et al., 2003; March et al., 1998). A study conducted by Amaya-Jackson et al. (2003) revealed that 57% of adolescents who underwent this treatment, after experiencing a traumatic event in the form of a community disaster, experienced reduced symptoms of PTSD immediately after treatment and 86% no longer had symptoms of PTSD at 6-month follow up. This treatment demonstrated similar results for depression, anxiety, and anger—all trauma-related symptoms. MMTT has been successfully implemented with adolescents who have experienced many different types of trauma, including sexual abuse. A recent meta-analysis (19 studies; $N = 4,655$) of the effectiveness of school-based trauma-informed treatments conducted by Rolfsnes and Idsoe (2011) did not include MMTT specifically but revealed that school-based CBT treatments similar to MMTT were the most successful in reducing symptoms of trauma when compared with other types of treatments, including play/art therapy, eye movement desensitization and reprocessing (EMDR), and mind-body skills ($d = .68$). Specifically, school-based CBT programs reduced symptoms of trauma with an effect size in the medium to large range. The advantages of MMTT are that it is a therapy developed specifically for adolescents who are experiencing trauma-related symptoms and that it is effective with a wide range of traumas (Amaya-Jackson et al., 2003). Further, it is a group therapy that can treat many individuals concurrently, and it is flexible, so that specific focuses can be included for adolescents who have experienced specific traumas. The disadvantage of MMTT is that it has mainly been tested with adolescents who have experienced only one incident of trauma.

Trauma-Focused Cognitive Behavioural Therapy

TF-CBT, created by Cohen and colleagues in 2006 (Cohen, Mannarino, Murray, & Igelman, 2006), addresses symptoms of PTSD among children and adolescents, as well as other trauma-

Table 1
A Summary of Trauma-Informed Treatment Models Currently Available

Treatment name	Description/Goals of treatment	Individual vs. Group treatment	Availability of treatment	Techniques used	Results
Multimodal trauma therapy (MMTT; Amaya-Jackson et al., 2003)	<ul style="list-style-type: none"> -Often conducted within school systems -Has only been extensively studied with adolescents who experienced a single traumatic event -Effective with males and females 	<ul style="list-style-type: none"> -Conducted in a group setting 	<ul style="list-style-type: none"> -Manuals are available at no charge by contacting the owner of the copyright 	<ul style="list-style-type: none"> -14 sessions in length -Uses CBT strategies, like narrative and relaxation techniques 	<ul style="list-style-type: none"> -Significantly reduced the symptoms of PTSD immediately after treatment and at 6-month follow-up assessment ($N = 7$) -Reduced anger, anxiety and depression (Amaya-Jackson et al., 2003) -No effect size available for MMTT specifically
Trauma-focused cognitive behavioral therapy (TF-CBT; Cohen et al., 2010)	<ul style="list-style-type: none"> -Aims to reduce symptoms of PTSD as well as other trauma-related symptoms (i.e., anger or depression) -Effective with males and females 	<ul style="list-style-type: none"> -Conducted on an individual basis with adolescents and with parents -Occasionally conducts sessions with the parent and child together 	<ul style="list-style-type: none"> -Manual is available online and in a hard-copy format 	<ul style="list-style-type: none"> -Conducted over 8 to 20 sessions -Based on CBT strategies -Teaches clients the skills to master trauma-related cues that incite stress 	<ul style="list-style-type: none"> -A review revealed that TF-CBT reduces trauma-related symptoms most effectively (Little & Akin-Little, 2009) -Meta-analysis ($N = 881$) revealed TF-CBT reduces PTSD symptoms with effect size of .40 (Cary & McMillen, 2012)
Stanford cue-centered therapy (SCCT; Carrion & Hull, 2010)	<ul style="list-style-type: none"> -Focuses on the cognitive, behavioral, affective, and physical effects of trauma -Effective with males and females 	<ul style="list-style-type: none"> -Conducted on an individual basis 	<ul style="list-style-type: none"> -Manual is available in a short form online -Extended manual is available through the Stanford School of Medicine 	<ul style="list-style-type: none"> -CBT strategies and an emphasis on expression of emotions -Emphasis on skill building and empowerment of the youth 	<ul style="list-style-type: none"> -Case studies ($N = 2$) using this method reveal that this treatment effectively teaches adolescents the skills they require to decrease the stress resulting from trauma-related symptoms (Carrion & Hull, 2010) -No effect size available
Seeking Safety (Najavits et al., 2006)	<ul style="list-style-type: none"> -Addresses trauma-related symptoms as well as substance abuse disorder -Effective with adolescents and adults -Effective with males and females 	<ul style="list-style-type: none"> -Conducted in a group or individual setting 	<ul style="list-style-type: none"> -Relevant training and implementation information is available on the internet 	<ul style="list-style-type: none"> -25 topics must be covered over the course of treatment -The order of the topics does not matter -The length of treatment is determined by the therapist 	<ul style="list-style-type: none"> -Effectively reduced symptoms of PTSD ($d = 1.26$), anxiety ($d = .61$), and depression ($d = .65$) in adolescent girls ($N = 59$) (Ford et al., 2012)
TARGET (Ford et al., 2005)	<ul style="list-style-type: none"> -Enhances self-regulation and decrease trauma-related symptoms -Studies have been conducted specifically with juvenile offenders -This trauma-informed model is currently being used with juvenile offenders in Connecticut and Florida -Effective with males and females 	<ul style="list-style-type: none"> -Conducted in a group or individual setting 	<ul style="list-style-type: none"> -Available through ATS -May be costly -Training is required -Ongoing collaboration with ATS is required 	<ul style="list-style-type: none"> -FREEDOM model -Explaining how trauma can change the brain and stress response -How to regulate stress response and externalized behaviors 	

Note. CBT = cognitive behavioural therapy; PTSD = posttraumatic stress disorder.

related outcomes (Cohen et al., 2010). TF-CBT was developed for children between the ages of 3 and 18 years, with specific consideration for the child's developmental level. TF-CBT is comprised of 8 to 20 individual sessions conducted with the child or their parent/caregiver, as well as joint sessions with both the child and the parent/caregiver (Cohen et al., 2010). It is important to note, though, that adolescents can also effectively receive TF-CBT without the involvement of a parent/caregiver. TF-CBT has been adapted for Native American children and is available in a number of languages, including German and Chinese (Cohen et al., 2010). Consistent with the primary theories informing CBT, TF-CBT posits that adolescents who experience a traumatic event are likely to experience disturbances in affect as well as in behavioural and cognitive aspects of functioning (Little & Akin-Little, 2009). The goal of TF-CBT is to help adolescents learn the skills that they will need to master the stress that is brought on by traumatic memories. Further, the goal of this therapy is to help these youth in mastering their reaction to things that may remind them of the trauma and ultimately move them beyond victimization. TF-CBT is a component-based model and can be summarised using the acronym "PRACTICE." During treatment, the traumatized child is provided with *psychoeducation*, taught *relaxation skills*, *affective expression and modulation*, and *cognitive coping skills*. In addition, they are encouraged to use *trauma narration* and cognitively process the trauma, use *in vivo exposure* to master trauma reminders, have *conjoint parent-child sessions*, and *enhance safety and the trajectory of development* (Cohen et al., 2010).

This method of treatment was originally developed for use with victims of sexual abuse but has been shown to effectively reduce the symptoms of trauma caused by a wide variety of traumatic experiences, including being traumatized on multiple occasions (Feather & Ronan, 2009; Little, Akin-Little, & Gutierrez, 2009). In fact, TF-CBT is labelled as an empirically validated treatment for trauma-related symptoms, and, in 2007, was the only trauma-informed treatment fully supported by the California Evidence-Based Clearinghouse for Child Welfare. Further, a comprehensive Cochrane review of TF-CBT, conducted in 2010, revealed that TF-CBT is effective at reducing trauma-related symptoms and recommended the use of this specific trauma-informed treatment (Roberts, Kitchiner, Kenardy, & Bisson, 2010).

The use of TF-CBT has been studied extensively with a variety of other populations. A small single-case design study conducted by Feather and Ronan (2009), with a sample of adolescents from New Zealand, revealed that TF-CBT was effective at reducing trauma-related symptoms and increasing the adolescents' ability to cope with trauma-related stressors. A study conducted by Weiner, Schneider, and Lyons (2009) revealed that both Caucasian and African American adolescents experienced a significant reduction in trauma-related symptoms and emotional and behavioural needs following TF-CBT. A recent meta-analysis of the effectiveness of TF-CBT examined 10 studies ($N = 881$) that used at least four to five of the "PRACTICE" components characteristic of TF-CBT revealed very positive results (Cary & McMillen, 2012). When compared with other treatments of trauma-related symptoms, TF-CBT significantly reduced PTSD, depression, and behavioural problems immediately after treatment (effect sizes are $d = .40$, $d = .37$, and $d = .20$, respectively). The significant reduction in PTSD symptoms was also present at the 12-month follow-up, although the effect size was slightly smaller (Cary & McMillen,

2012). The conclusion drawn from this meta-analysis is that TF-CBT does significantly reduce trauma-related symptoms among children and adolescents. In summary, TF-CBT is effective across different cultures and races and takes into account the adolescent's unique developmental needs. TF-CBT is a flexible and individualized treatment method that has been shown to effectively reduce symptoms of trauma (see also Little & Akin-Little, 2009).

Stanford Cue-Centered Therapy (SCCT)

A relatively new trauma-informed treatment is the SCCT, a short integrative therapy for adolescents that combines a number of methods of treatment from other empirically supported therapies (Carrion & Hull, 2010). This type of treatment is one of the only therapies to solely focus on the treatment of trauma within an individual context. SCCT is designed to address the four main areas of functioning thought to be affected by trauma: cognitive, emotional, behavioural, and physical. It is conducted using a combination of cognitive-behavioural techniques, such as cognitive restructuring, as well as psychoeducation, relaxation, methods of expression, narrative use, and parental coaching (Stanford School of Medicine, 2010). The goal of SCCT is to decrease an individual's negative cognitions and sensitivity to traumatic memory while increasing the use of positive emotional expressions and adaptive coping methods. SCCT treatment is typically 15 to 18 sessions long and is a unique form of treatment focusing on building skills, such as effective methods of relaxation and empowerment. This is primarily achieved through helping the child to understand how and why the trauma affects them, as well as being able to control their responses to trauma stimuli (Carrion & Hull, 2010). Although there has been little empirical research completed on the effectiveness of SCCT, limited preliminary findings using case studies are promising (Carrion & Hull, 2010). The advantages of SCCT are that it is effective across races and cultures, and appears to be effective with both genders. This treatment is also reported to be effective with high-risk youth. The disadvantages of SCCT are that it requires a significant amount of caretaker involvement and that it has not been rigorously tested with large samples (in fact, thus far, findings have been isolated to case studies of the treatment methods effectiveness). Further, it only reduced a subset of the symptoms of PTSD, and treatment time may have to be extended for severely traumatized individuals (Cohen et al., 2006).

Seeking Safety

Seeking Safety is a present-focused therapy that addresses both trauma-related symptoms as well as substance abuse disorder in adults and adolescents (Brown et al., 2007; Najavits, Gallop, & Weiss, 2006). The Seeking Safety treatment is based on five basic principles: personal safety as a priority, the integrated treatment of both disorders, a focus on the client's needs, attention to the therapeutic process, and, lastly, a focus on four specific content areas—cognitions, behaviours, interpersonal interactions, and case management (Najavits et al., 2006). Similar to the other trauma-focused treatments, Seeking Safety involves the use of psychoeducation, coping skills such as relaxation techniques and trigger identification, trauma narrative use, and cognitive restructuring. Seeking Safety has been specifically adapted for adolescents.

Some examples of this adaptation include the therapist taking into account the reading level of the adolescent, as well as using displacement to discuss traumatic events. Displacement is a technique used to distance the client from the trauma narrative; it is usually done by allowing the client to recount the trauma narrative as if the experience happened to a friend (Najavits et al., 2006). A study conducted by Brown et al. (2007) examined Seeking Safety as a treatment method for adults and revealed reduced symptoms of PTSD as well as reduced symptoms of substance use disorder. The participants in this study responded well to the treatment and reportedly provided positive feedback, remarking that they appreciated how the treatment plan was reflective of their specific needs. Further, a study conducted by Najavits and colleagues (2006) using a small sample size ($N = 33$) found Seeking Safety to significantly reduce some trauma-related symptoms, such as sexual concerns ($d = .5$) and sexual distress ($d = .71$), as well as symptoms associated with substance abuse disorder, with effect sizes ranging from $d = .37$ to $d = 1.17$. The advantages of the Seeking Safety therapy method are that it has been adapted specifically for adolescents, it requires the involvement of parents in only one session, it is flexible, and it is culturally sensitive. Relevant training and implementation information is available online (<http://www.seekingsafety.org>) and this therapeutic method has been shown empirically to be effective with adolescents (Najavits et al., 2006). A further advantage of Seeking Safety is that it combines the treatment for two disorders, PTSD and substance use disorder.

Trauma Affect Regulation: A Guide for Education and Therapy (TARGET)

TARGET is a trauma-informed treatment that has been used and tested specifically on juvenile offender samples (Advanced Trauma Solutions, 2001–2010). TARGET can be effectively employed in either a group therapy setting or in individual sessions and is largely based on cognitive-behavioural strategies (Ford, Steinberg, Hawke, Levine, & Zhang, 2012). The goal of TARGET is to enhance self-regulation capacities and functioning in adolescents who may have been negatively affected by psychological trauma experienced in childhood. TARGET also trains survivors of trauma to better understand how trauma changes the brain's normal stress response into an alarm response, which can develop into PTSD (Advanced Trauma Solutions, 2001–2010). Adolescents undergoing TARGET are taught a sequence of practical self-regulation skills through creative exercises that are designed to boost self-esteem and belief in ability. They also are taught how to properly manage and control anger, impulsivity, and feelings of grief, guilt, and shame. TARGET implements a FREEDOM treatment model, an acronym for *focus, recognize triggers, emotion self-check, evaluate thoughts, define goals, options, and make a contribution* (Advanced Trauma Solutions, 2001–2010; Ford, Courtois, van de Hart, Nijenhuis, & Steele, 2005). There are only two treatment methods that differentiate TARGET from TF-CBT, the first being that those receiving TARGET are not required to create a trauma narrative, and second, the parents of adolescents receiving TARGET are not involved in the treatment (Ford et al., 2012).

The use of TARGET treatment in juvenile detention centers has been thoroughly evaluated in both male and female samples. Studies have previously demonstrated that young offenders who are provided with TARGET are less likely to be aggressive toward prison staff and other inmates (Ford et al., 2005). Further, a similar study of a fairly large sample of juvenile delinquents revealed that each TARGET session within the first 7 days of confinement resulted in 54% fewer disciplinary incidents, 72 fewer minutes in disciplinary seclusion, and increased prosocial behaviour over a 14-day stay at the institution (Ford & Hawke, in review). A second study conducted with female juvenile delinquents revealed that TARGET significantly reduced the severity of PTSD and trauma-related symptoms such as anxiety, disturbed cognitions, and affect regulation, with an effect size in the low to medium range (Ford et al., 2012). Another advantage of TARGET is that it can be used in conjunction with TF-CBT, and previous research has shown that when these two treatment methods are combined, they reduce aggression among adolescents in contact with the juvenile justice system (Ford et al., 2005). Potential disadvantages of TARGET are that it may not be effective across different races and cultures. Further, there is a lack of overall empirical research examining its effectiveness with adolescents not involved with the juvenile justice system (see Table 1 for a summary of the five main trauma-informed treatments).

Finally, it should be noted that there are a variety of other alternative treatments for trauma, such as imaginal and in vivo exposure therapy (Saigh, 1987) and art therapy (e.g., Krantz & Pennebaker, 2007). Further, EMDR has also been used to treat PTSD (e.g., Greenwald, 2007; Shapiro, 1995). A meta-analysis of the effectiveness of EMDR in children demonstrated that this therapeutic method does significantly reduce trauma-related symptoms among children (Rodenburg, Benjamin, de Roos, Meijer, & Stams, 2009). However, when compared with children who were simultaneously receiving CBT for trauma-related symptoms, the effectiveness of the EMDR treatment was subsumed by the effect of CBT. That is, it did not effectively reduce symptoms of trauma over and above the effect of CBT. Further, the exact mechanism behind EMDR therapy that instigates change in functioning is still relatively unknown, making this type of therapy potentially more problematic among youth. While these therapies have been used to treat trauma-related symptoms with positive results, these types of therapy were not described in more detail because they are not independent trauma treatments and are often used in conjunction with other trauma-focused therapies such as TF-CBT.

Interestingly, treatments for PTSD and other trauma-related symptoms do not appear to aid in the reduction of symptoms for one gender more than the other (Carrion & Hull, 2010; Cohen et al., 2010; Ford et al., 2005). Further, there has been little research conducted on the effectiveness of these therapies among different races and cultures. While differences between genders and cultures may exist for effectiveness of treatment, there is currently not enough research to determine where these differences may lie.

Summary of Techniques Used Within Trauma-Informed Treatments

A qualitative review of the trauma-focused therapies described revealed five common therapeutic techniques. The five therapeutic techniques that are included in most or all of the established

trauma-informed treatment programs are psychoeducation, coping skills, creating a trauma narrative, cognitive restructuring, and creating a posttreatment plan (see Table 2 for a summary of these techniques). The proceeding section will consider each of these five most salient components of effective treatment.

One of the most standard practices among the trauma-informed treatment programs is providing the client with psychoeducation. Psychoeducation is used in most CBT-based treatments and has been shown to effectively reduce symptoms among patients with varying disorders, including, for example, schizophrenia (Rummel-Kluge & Kissling, 2008). This practice, used in all of the trauma-informed treatment programs, is often the first step of treatment (Cohen et al., 2010). The purpose of psychoeducation is to help the adolescent understand what a traumatic event is, how experiencing trauma affects an individual, and how trauma-related symptoms are perpetuated long after the trauma has occurred (Carrion & Hull, 2010). Psychoeducation may range from explaining the way that trauma affects specific areas of the brain (using age-appropriate terms, as in the TARGET treatment) to how trauma-related symptoms are perpetuated by classical conditioning (SCCT and Seeking Safety; Carrion & Hull, 2010; Ford et al., 2012; Najavits et al., 2006).

After the psychoeducation component of therapy, many trauma-specific treatment programs employ a module of treatment that facilitates both learning about and improving coping skills. Coping skills consist of a variety of techniques, including relaxation skills, identifying triggers, and methods of expression (Amaya-Jackson et al., 2003; Carrion & Hull, 2010; Cohen et al., 2010; Ford, 2010). While there is some variation amongst programs regarding which types of coping skills they will primarily focus on, all of the current trauma-informed treatment programs consistently teach participants a variety of relaxation skills (Cohen et al., 2010; Ford, 2010). There is a wide array of methods that can be taught to aid in relaxation, such as controlling breathing, using meditation, and using progressive muscle relaxation (Amaya-Jackson et al., 2003; Ford, 2010; Lee, Gavriel, Drummond, Richards, & Greenwald, 2002; Taylor, 2006). These techniques allow the adolescent to become more cognizant of their own bodies and have greater control over their stress response systems. Relaxation techniques are used in a number of CBT-based treatments, including treatment for physical problems such as chronic back pain (Lebovits, 2007). In addition to teaching individual skills to aid in relaxation, CBT-based therapies may also use anxiety management training (AMT), an intervention that is used to teach adolescents to manage anxiety using specific techniques such as stress inoculation training, cognitive restructuring, and relaxation exercises (Farrell et al., 1998). Stress inoculation training is a technique commonly used in CBT that helps a traumatized individual to deal with past traumas as well as to prepare him/her for dealing with future stressors (Lee et al., 2002; Meichenbaum, 2009). Methods of relaxation are often taught to the adolescent early on in therapy, for two reasons. First, the adolescent can start to use the relaxation techniques outside of therapy immediately to relieve anxiety, and second, he or she should learn methods of relaxation before confronting painful and anxiety-inducing memories of trauma during treatment.

In relation to relaxation skills, adolescents in most of the trauma-informed treatment programs are taught to identify their stressors. After experiencing a trauma, there may be certain people, places, noises, and/or smells that can trigger flashbacks to the

trauma, an anxiety attack, or just cause general anxiety (Ford, 2010). For successful treatment, it is imperative that clients learn to identify their triggers and to apply their newfound relaxation techniques when these triggers cause them stress (Cohen et al., 2010; Lee et al., 2002; Ford, 2010). This leads to the third most common coping skill—*affect regulation and methods of expression*. Proper affect regulation is integral to emotional well-being, and emotion regulation and expression is addressed in a number of different treatment strategies (Ginot, 2012). This can be accomplished by using the relaxation skills typically taught earlier in therapy, by calming oneself before reacting, and by encouraging other methods of expression such as writing in a journal or through art (Amaya-Jackson et al., 2003; Carrion & Hull, 2010; Krantz & Pennebaker, 2007). Adolescents who have experienced trauma often tend to focus on negative emotions more often than positive ones, and are taught in treatment to identify the benefits of positive emotional expression in and outside of therapy (Carrion & Hull, 2010; Ford, 2010).

As previously discussed, adolescents who have experienced trauma early on in life may suffer from poor social functioning and may have difficulty understanding and identifying their own emotions, as well as the emotions and facial expressions of others (Margolin & Gordis, 2000). The TARGET treatment dedicates a specific section of the therapy to “emotion self-check” to help the adolescent identify the emotions that he or she is feeling as well as helping him/her to recognize emotions in others (Ford, 2010). While this is not a typical component of trauma-specific therapies, this appears to be a beneficial method for helping adolescents in the program to better identify and understand emotions and how these may act as potential triggers.

In the majority of the trauma-informed therapies, once the adolescent has received psychoeducation and has learned effective coping skills, he or she is encouraged to form a trauma narrative (Amaya-Jackson et al., 2003; Cohen et al., 2010; Farrell et al., 1998; Najavits et al., 2006). A trauma narrative encourages the adolescent to recount his or her traumatic experience in detail, either orally or in written form (Amaya-Jackson et al., 2003; Deblinger, Mannarino, Cohen, Runyon, & Steer, 2011). TF-CBT, MMTT, AMT, Seeking Safety, and SCCT all involve creating a trauma narrative and support the belief that having the adolescent face his or her traumatic event is crucial to the success of the treatment.

Most trauma-informed treatments also include a specific section of therapy (typically after the trauma narrative has been addressed) devoted to cognitive restructuring (Amaya-Jackson et al., 2003; Cohen et al., 2010). Cognitive restructuring, as it pertains specifically to trauma-informed treatment, is similar to some of the coping skills considered here, but it more specifically addresses disturbed cognitions and beliefs. The goal of cognitive restructuring is to bring awareness to the individual’s own thoughts, so that these thought processes can be altered to correct maladaptive thinking and beliefs about the trauma itself and trauma-related cues (Hassija & Gray, 2010). Research has demonstrated that the use of cognitive restructuring significantly reduces trauma-related symptoms in adolescents diagnosed with PTSD (Rosenberg et al., 2011). Finally, most of the trauma-informed therapies involve creating a plan for the adolescent for after he or she has finished therapy (Amaya-Jackson et al., 2003; Cohen et al., 2010; Ford, 2010). Specifically, the therapist and the adolescent work together

Table 2
A Summary of Therapeutic Techniques Currently Used in Trauma-Informed Treatment Models

Therapeutic practices	Implementation	Goal	Addresses	Examples
Psychoeducation	-All trauma-informed therapies	-To provide the client with knowledge about the organic cause of trauma-related symptoms -To ensure that the adolescent understands the reasons that symptoms are perpetuated -To teach the adolescent how to calm themselves when experiencing stress from a trigger or a flashback	-Organic causes of trauma-related symptoms (physiological changes to the brain) -Classical conditioning and how it perpetuates stress reactions to triggers	-The TARGET treatment explains (at a developmental age appropriate level) how trauma affects different areas of the brain (alarm center, filing center, etc) and how this change causes stress reactions
Coping skills: Relaxation techniques	-All trauma-informed therapies	-To identify the triggers that cause the adolescent to experience stress, anxiety, fear, and flashbacks	-Physiological symptoms such as stress, anxiety, and fear -How to control these responses using relaxation -Triggers are unique to the individual and can range from sounds to smells, people and places -Triggers, such as loud sounds, can occur in daily life and it is important for the individual to know their trigger so they can use relaxation techniques to calm themselves to avoid stress and fear	-SCCT teaches relaxation through meditation, breathing exercises, and progressive muscle relaxation -AMT uses stress inoculation training (SIT; Meichenbaum, 2009) to identify triggers and cope with the emotions that they induce
Coping skills: Affect regulation and expression	-TF-CBT, TARGET, and SCCT	-To teach adolescents how to regulate and properly express emotion -To help adolescents identify emotions within themselves and others express -To help adolescents experience more positive emotions	-Because of the brain being on constant alert for a threat, those with trauma-related symptoms experience more negative emotions than positive; this helps adolescents to experience and express positive emotions as well -Adolescents who were traumatized at a young age may have difficulty with areas of social functioning, particularly identifying emotions in others -Helps to reduce externalized symptoms such as aggression by encouraging proper expression of emotions	-TARGET treatment helps adolescents to identify the emotions of others through activities where they look at pictures of faces and must state what emotion the person in the picture is expressing -Other therapies encourage expression through writing or other forms of art
Trauma Narrative	-All trauma-informed therapies except for TARGET	-To have the adolescent relive the trauma in detail, orally or in written form	-This therapeutic practice can only be done after the adolescent has mastered their coping skills -Allows the adolescent to relive the memory while applying their newfound relaxation skills to ease fear and stress	-MMTT requires the adolescent to create a trauma narrative
Cognitive Restructuring	-All CBT-based trauma-informed therapies	-To address and adjust schemas or thought patterns that may be having a negative effect on the adolescent -To identify and adjust schemas that perpetuate trauma-related symptoms -To ensure that the adolescent continues to use the coping skills taught in therapy to reduce trauma-related symptoms	-Negative thought patterns that perpetuate trauma must be eradicated so that the individual can reduce their trauma-related symptoms -If a plan is not made to help the adolescent cope on their own after therapy, it is possible that trauma-related symptoms may return	-TF-CBT includes a section on cognitive restructuring and cognitive coping skills
Planning for the Future	-All trauma-informed therapies			-Seeking Safety encourages adolescents to continue to use the resources that they learned during therapy in their daily life

Note. AMT = anxiety management training; CBT = cognitive behavioural therapy; MMTT = multimodal trauma therapy; SCCT = Stanford cue-centered therapy; TARGET = Trauma Affect Regulation: Guide for Education and Therapy; TF-CBT = trauma-focused cognitive behavioural therapy.

to create a plan to maintain the benefits of treatment. For example, adolescents are encouraged to implement their relaxation skills during social interactions when they may feel overwhelmed or feel the need to be aggressive. A final technique used in creating a post-trauma-informed therapy plan is, if possible, including the adolescent's parents as a source of encouragement.

Finally, it would also appear that understanding the time, in relation to development, that the trauma was experienced is crucial to determining the developmental issues that a traumatized child may have (e.g., Perry, 2009). Further, when choosing a trauma-informed treatment, it is important to keep in mind that the client's age may be significantly different from his or her developmental stage, both cognitively and socially (De Bellis et al., 2010). The goal of all of the established trauma-informed therapies should be to help the adolescent face his or her traumatic experiences gradually, so as not to traumatize him or her further.

Summary and Suggestions

While the authors would prefer that childhood trauma be prevented before it occurs, it is inevitable that some children will experience traumatic events and require treatment. The purpose of the current article was to conduct a thorough examination and review of the available treatments for trauma-related symptoms, and to provide recommendations as to the most effective treatment. The authors acknowledge that some of these suggestions are based on a relatively scant amount of empirical enquiry. While some treatments, such as TF-CBT and TARGET, are currently being studied with positive results, because of an overall paucity of empirical support, it is difficult to delineate the full efficacy of these treatments. We would like to encourage researchers and clinicians to conduct more studies in the area of trauma-focused therapy for youth, with the aim of creating a similar review based on additional empirical enquiry for available trauma-focused treatments. Specifically, a detailed examination of the levels of evidence supporting the therapeutic techniques used within trauma-focused treatments would be extremely useful.

It is important to note, before beginning trauma-focused treatment of any kind, that there may be barriers to successful treatment that do not exist for other childhood issues. Specifically, the child's safety may be at risk if they continue to live in a household with an abusive or neglectful parent, as the trauma may be ongoing (Cohen, Mannarino, & Murray, 2011; Ford & Cloitre, 2009; van der Kolk, 2005). In addition, children who have been traumatized at a young age have difficulty trusting others and this may result in a poor bond, or a lack of rapport, between the treatment provider and the child, which is often detrimental to the success of the treatment (Ford & Cloitre, 2009). Therapists treating children with trauma-related symptoms must be aware of these issues if they wish to successfully treat traumatized children.

TF-CBT is the most studied, and the most endorsed, of all of the treatments for trauma-related symptoms among children and adolescents (Ford & Cloitre, 2009; Silverman et al., 2008). It is well established and research has demonstrated that it effectively reduces symptoms of trauma (Deblinger, Behl, & Glickman, 2012). The authors of this article strongly encourage the use of TF-CBT to help reduce trauma-related symptoms among children and adolescents.

Additionally, if a practitioner were attempting to treat traumatized adolescents with behavioural or aggression problems, the authors of this article suggest that TARGET training be used. TARGET treatment has been shown to effectively reduce both internal and external trauma-related symptoms, as well as external aggression, and is effective with both males and females (Ford et al., 2005).

While TARGET can be implemented as either an individual or group treatment method, some of the other specific group therapies outlined here also appear quite promising. Indeed, group therapies can be cost- and time-effective, allowing the therapist to treat many individuals suffering from trauma-related symptoms at once. Group therapy may also enable adolescents to share their traumatic experience with others who have also been traumatized, and to learn from others who are overcoming trauma-related symptoms (Pfefferbaum, 1997). Both MMTT and TF-CBT are group therapies that could effectively address trauma-related symptoms in adolescents. Both of these therapies are grounded in CBT and have been effective in reducing trauma-related symptoms such as depression, anxiety, and avoidance behaviours among adolescents. Both MMTT and TF-CBT were designed specifically for use with youth, are effective across different races and cultures, and are effective at treating a wide array of traumas (Follette & Ruzek, 2006).

Regardless of the specific treatment protocol that is ultimately adhered to, it is important to keep in mind that psychoeducation, coping skills, trauma narratives, cognitive restructuring, and creating an action plan for after the cessation of therapy are all typically integral practices of the trauma-informed treatment programs. By implementing some or all of these key practices, it should be possible to reduce trauma-related symptoms among adolescents.

In conclusion, PTSD (and trauma-related symptoms) is present in a substantial proportion of adolescents (Giaconia, Reinherz, Silverman, & Pakiz, 1995; Grella et al., 2005). Traumatic experiences can disrupt and disturb a child's development, which, if left untreated, has been linked to experiencing a host of emotional and behavioural issues in adulthood as well. It is clearly important to address issues of trauma, and the current article has made a number of observations and suggestions with the intent to enhance the treatment of trauma-related symptoms among adolescents.

Résumé

Les traumatismes vécus pendant l'enfance ou la jeunesse ont diverses conséquences sérieuses, qui peuvent se poursuivre à l'âge adulte. Ces conséquences peuvent inclure des difficultés dans des domaines clés, comme à l'école ou dans les interactions sociales, le syndrome de stress post-traumatique (SSPT), ou encore des problèmes d'ordre criminel. Malheureusement, on estime qu'environ 1 jeune sur 4 connaîtra un quelconque traumatisme sérieux durant son enfance (Duke, Pettingell, McMorris & Borowsky, 2010). Le présent article fournit un sommaire des principales thérapies sensibles aux traumatismes qui sont actuellement offertes aux adolescents aux prises avec le SSPT ou des symptômes reliés à un traumatisme, ainsi que les techniques thérapeutiques qui sont communes à toutes ces thérapies. En outre sont formulées des recommandations sur les thérapies sensibles

aux traumatismes qui seraient les plus utiles pour le traitement des adolescents. Le recours à des thérapies qui tiennent spécifiquement compte du risque potentiel d'un jeune de vivre un traumatisme facilitera la réduction des symptômes négatifs ainsi qu'une amélioration du fonctionnement du client.

Mots-clés : traumatisme, adolescent, traitement sensible aux traumatismes, SSPT, thérapie cognitivo-comportementale sensible aux traumatismes.

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