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Invited Review

Treating child abuse-related posttraumatic stress and comorbid substance abuse in adolescents[☆]

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Abstract

Objective: Child abuse is a risk factor for developing Posttraumatic Stress Disorder (PTSD) and subsequent Substance Use Disorder (SUD). The purpose of this review is to summarize current knowledge about effective treatments for adolescent abuse-related PTSD, SUD, and the co-occurrence of these conditions.

Method: The literature on empirical treatment studies for these conditions in adolescence was reviewed, summarized, and synthesized.

Results: Randomized controlled studies of abuse-related PTSD and SUD in adolescents have supported the efficacy of cognitive behaviorally-based individual and family treatment components. Components overlap considerably in empirically supported treatments for each disorder. An integrated treatment approach is described for use in adolescents with abuse-related PTSD and SUD, with recommendations for optimizing services for this population and for future research.

Conclusions: The available evidence on effective treatments suggests that integrated PTSD- and SUD-focused cognitive-behavioral and family treatment for adolescents with comorbid abuse-related PTSD and SUD may optimize outcomes for this population.

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Keywords: Posttraumatic stress disorder; Substance use disorder; Child abuse; Adolescents; Integrated treatment

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Introduction

There is a clear association between child abuse and the subsequent development of both posttraumatic stress disorder (PTSD) and substance use disorders (SUD) during adolescence and young adulthood. Both PTSD and SUD in adolescents vary in severity and duration and in some adolescents, these disorders may be self-limited. However, for many others, these conditions may become chronic and unremitting, leading to lifelong impairment. In this article, the term SUD will be used to refer to significant drug and/or alcohol abuse or dependence, rather than intermittent or experimental substance usage. Although research has demonstrated bidirectional relationships between PTSD and SUD in adolescents (Giaconia, Reinherz, Paradis, & Stashwick, 2003), this article specifically addresses treatment for those adolescents whose child abuse-related PTSD preceded the development of SUD rather than the opposite (i.e., those whose are not believed to have a primary SUD disorder).

There is growing evidence that both PTSD and SUD are associated with significant functional and structural brain abnormalities in adolescents, which appear to worsen with the length of time either disorder has been present (DeBellis et al., 1999, 2000). Additionally, both SUD and trauma history place children, adolescents, and young adults at increased risk of suicide attempts (Brent et al., 2002). Thus, there are compelling reasons to develop and provide effective treatments for these conditions, particularly when they coexist. This article will describe the relationships between child abuse, PTSD, and SUD in youth, examine evidence-based models of how each of these disorders influence the other in adolescents, describe randomized controlled treatment studies for youth with these disorders, and describe an integrated treatment approach to address the needs of adolescents with comorbid abuse-related PTSD and SUD.

The association between childhood trauma, PTSD, and SUD

Associations between childhood physical or sexual abuse, PTSD, and subsequent SUD have been documented repeatedly in adolescence and young adulthood (Briere & Zaidi, 1989; Cohen, Spirito, & Sterling, 1996; Herman, Russell, & Trocki, 1986; Miller, Downs, Gondoli, & Keil, 1987). Conversely, studies of youth with SUD have demonstrated that these samples have very high rates of past child abuse and concurrent PTSD (Clark et al., 1995; Van Hasselt, Ammerman, Glancy, & Bukstein, 1992). Recent population-based epidemiological studies have verified the associations between child abuse, PTSD, and SUD in adolescence and young adulthood. For example, a national survey (Duncan, Saunders, Kilpatrick, Hanson, & Resnick, 1996) documented a significant association between child physical abuse and SUD, depression and PTSD. A 17-year longitudinal study of a community based sample demonstrated that by 21 years of age there was a highly significant association between physical abuse and drug abuse/dependence for males, and between sexual abuse and alcohol abuse/dependence in females (Silverman, Reinherz, & Giaconia, 1996). Both physical and sexual abuse were highly associated with PTSD in females, and physical abuse was strongly correlated with PTSD in males in this cohort.

These associations have also been documented in a number of cross-cultural studies. Fergusson and Lynskey (1997) followed a birth cohort of New Zealand youth over 18 years and found that physical abuse was significantly associated with both cannabis and alcohol abuse; even after controlling for social and contextual factors associated with maltreatment, physical abuse predicted future alcohol abuse. Ruchkin, Schwab-Stone, Koposov, Vermeiren, and Steiner (2002) examined 370 youths incarcerated in Russia, and, similar to parallel studies in the US (Carrion & Steiner, 2000; Steiner, Garcia, & Matthews, 1997), found that a very large proportion of these youth had been exposed to child abuse and other traumatic events, that this cohort had high rates of PTSD, and that severity of PTSD symptoms predicted both drug and alcohol abuse. Studies have evaluated American and Australian twin pairs and documented that a history of child sexual abuse significantly increased risk for substance abuse and other psychopathology, even after controlling for family background risk factors such as familial substance abuse, parental conflict, presence of a stepparent, and child physical abuse and neglect (Kendler et al., 2000; Nelson et al., 2002). In summary, there are consistently documented associations between child abuse, the development of PTSD, and the subsequent development of SUD. Additionally, some studies have demonstrated that the severity of PTSD symptoms predicts the presence of SUD in traumatized youth.

Models of interactions between child abuse-related PTSD and SUD in adolescents

Why are there such consistent connections between child abuse-related PTSD and the subsequent development of SUD? It is likely that there are neurobiological interactions between these conditions which have yet to be completely elucidated (DeBellis, 2002). Sophisticated structural equation modeling studies of child sexual abuse response provide important insights into these connections, although they have not explicitly included substance abuse as an outcome (Barker-Collo & Read, 2003). These studies indicate that the strongest predictors of negative psychological outcomes following childhood sexual abuse are insecure attachment style, internal attributions of blame, avoidant (as opposed to active) coping strategies, powerlessness, and stigmatization. These findings provide a theoretical explanation of why child abuse-related PTSD and SUD are so strongly linked, and are often mutually reinforcing.

According to these empirically supported models, when confronted with situations of heightened stress, children and youth with insecure (i.e., anxious or avoidant) attachments are more likely to select avoidant rather than active/cognitive problem-solving strategies. This may be particularly true following abuse in childhood because for children, active coping typically includes enlisting the emotional and practical assistance of supportive adults. Children with insecure attachments may be less sure of eliciting support from adults, and thus may seek means of avoidance rather than seeking social support. In a similar manner, children who blame themselves or feel stigmatized due to having been abused may be less likely to turn to others for support and more likely to utilize avoidant strategies. Children who have developed a tendency to use such avoidant strategies may be at greater risk to develop PTSD; conversely, these preferred avoidant coping mechanisms may be exacerbated by the development of PTSD.

For those children who develop abuse-related PTSD, intrusive abuse reminders are prevalent; these elicit intense psychological distress (terror, anger, sadness, shame, etc.) as well

as physiological hyperarousal (increased heart rate, startle, sleep disturbance, etc.). In order to minimize these unpleasant emotions and physical responses, children avoid reminders of the abuse as well as innocuous situations which they associate with the abuse. These children are also likely to prefer avoidant coping strategies to active ones, as the latter typically involve thinking or talking directly about the abuse and abuse-related thoughts and feelings. It is important to recognize that preference for avoidant strategies deprive youth of more healing and more permanent coping strategies such as talking about the source of the pain (including cognitive distortions about self-blame and stigmatization), desensitization to trauma reminders through active coping, and receiving support from a trusted peer or adult.

When abuse reminders are ubiquitous or intrusive enough, avoidance becomes more difficult. For these children, drugs, and/or alcohol may offer a readily available method for achieving avoidance of distressing emotions and physical arousal. Since this effect is temporary, increasing frequency and dosage of substance use may be necessary to achieve ongoing avoidance or emotional numbing. Coupled with the physiological and psychological dependence associated with many of these substances, the need for long-lasting avoidance and emotional numbing may result in addiction. This self-medication model explains how youth with preexisting PTSD may develop SUD.

It is also important to consider how SUD may reinforce preexisting PTSD symptoms. Some research indicates that youth with SUD are at increased risk of experiencing interpersonal violence (Giaconia et al., 2003), which could serve as a reminder of previous abuse and contribute to worsening PTSD symptoms. A specific example would be youth who resort to prostitution or exchanging sexual acts in order to obtain drugs. Such behaviors place these youth at heightened risk of sexual and physical coercion/assault, which may likely serve as additional trauma reminders, and maintain or exacerbate PTSD symptoms. (It is also possible that the history of child abuse and not SUD predisposes some of these youth toward prostitution and sexually coerced behaviors.) Additionally, such behaviors (as well as SUD itself) may reinforce or worsen existing negative cognitions about self (self-blame for the abuse or other negative events; powerlessness, shame) or about the untrustworthiness of others. Youth who are engaged in SUD may be shunned by non-using peers, further increasing shame, stigmatization, and diminishing interpersonal trust. These feelings and cognitions may themselves serve as abuse reminders (as they originated from the child abuse) and thus exacerbate PTSD symptoms. Physiological hyperarousal associated with PTSD is often temporarily relieved by substance abuse but worsened upon withdrawal from certain drugs or alcohol; this exacerbation of PTSD hyperarousal symptoms can also reinforce increasing substance abuse over time. Thus, for some youth, abuse-related PTSD and SUD may create a “vicious cycle” with increasingly negative consequences.

These interactions suggest that interventions which address cognitive distortions about responsibility for child abuse, increase tolerance of abuse reminders and related negative affective states, improve active coping strategies, enhance problem-solving, safety and social skills, and optimize parental and other social support, may improve both PTSD and SUD symptoms in these youth. As discussed in the following sections, these interventions are present in most treatments which have proven to be effective in treating PTSD symptoms and in decreasing SUD in youth.

Empirical treatment studies for abuse-related PTSD in adolescents

Trauma-focused cognitive-behavioral therapy

Since randomized controlled trials (RCTs) are the most scientifically rigorous method of evaluating treatment efficacy, only RCTs utilizing well-defined manualized treatments are included in the following sections. At least five RCTs have demonstrated superiority of trauma-focused cognitive behavioral therapy (TF-CBT) in treating PTSD and related symptoms in sexually abused children and adolescents when compared to nondirective play or supportive therapy, child centered therapy, standard treatment in the community or wait list control conditions (Cohen, Deblinger, Mannarino, & Steer, *in press*; Cohen & Mannarino, 1996, 1998; Deblinger, Lippman, & Steer, 1996; King et al., 2000). These studies have utilized developmentally sensitive interventions and have demonstrated comparable efficacy of TF-CBT in preschoolers, school-aged children, and adolescents. Those studies that examined the impact of gender and ethnicity did not find these to be significant moderators of treatment response (Cohen, Deblinger, Mannarino, & DeArellano, 2001). In these studies, TF-CBT included the following components: stress management training (relaxation, focused breathing, and positive self-talk skills), psychoeducation (providing information about PTSD symptoms and other common reactions to trauma), “gradual exposure” or constructing the child’s trauma narrative (gradually encouraging the youth to describe increasing details about the abuse as well as associated thoughts, feelings and body sensations, in a manner such that these descriptions elicit less intense fear and horror over time), recognizing and coping with abuse reminders, cognitive processing and cognitive coping skills (modifying inaccurate or unhelpful thoughts), improving problem-solving and safety skills, and parental interventions (in some studies this included two to three joint parent-child sessions) (Cohen, Mannarino, Berliner, & Deblinger, 2000; Deblinger & Heflin, 1996). It is important to note that these interventions are provided in the context of a supportive therapeutic relationship which emphasizes enhancing trust and re-empowering the child and parent. TF-CBT also draws on a variety of other psychotherapeutic interventions, for example, incorporating self-exploration to examine the origins of cognitive distortions or using family systems theory to modify dysfunctional familial interactional patterns. At this writing, TF-CBT is identified as being a first line treatment for childhood PTSD by the American Academy of Child and Adolescent Psychiatry (AACAP, 1998) and the International Society for Traumatic Stress Studies (ISTSS) (Cohen, Berliner, & March, 2000).

Other psychosocial treatments

Eye movement desensitization and reprocessing treatment (EMDR) consists of exposure and cognitive processing techniques similar to those used in TF-CBT, paired with therapist-directed eye movements. One preliminary study demonstrated that EMDR was comparable to TF-CBT in decreasing PTSD symptoms in Iranian sexually abused children (Jaberghaderi, Greenwald, Rubin, Dolatabadim, & Zand, 2002). Further empirical evaluation of this treatment is needed to replicate these findings.

A recent study found that 30 sessions of individual psychodynamic, abuse-focused treatment was superior to 19 sessions of psychoeducational group therapy in improving PTSD

symptoms in sexually abused children and adolescents (Trowell et al., 2002). Due to the design of this study, it is not possible to determine if differences were due to the treatment model (psychodynamic vs. psychoeducation), treatment format (individual vs. group), or dosage of treatment (30 vs. 19 sessions). However, it suggests that individual psychodynamic therapy should be further evaluated in well controlled RCTs in the future.

Family therapy and CBT were each found to be superior to standard community treatment in decreasing children's violent and aggressive behaviors in one study of physically abused youth (Kolko, 1996). Family therapy in this case consisted of psychoeducation about physical abuse, behavioral contracting for nonviolence, improving and implementing problem-solving and communication skills among family members, and establishing specific family routines to enforce appropriate youth behaviors and parental limit setting.

Although frequently provided to abused and otherwise traumatized youth, there is currently little empirical support for psychotherapeutic interventions such as client-focused supportive counseling, psychological debriefing or other crisis interventions, or creative arts therapies (music, art, dance). It is possible that future research will demonstrate benefits of these treatments for selected abused youth. None of the treatment studies described above has specifically examined SUD as an outcome measure; some have explicitly excluded youth with active substance abuse. Further research is needed to determine the efficacy of these treatments for youth with abuse-related PTSD who also have SUD.

Pharmacologic treatments

To date, no published randomized controlled trial has examined the efficacy of pharmacologic treatments in adolescents with abuse-related PTSD. Several small open label studies have used a variety of psychopharmacologic agents to treat PTSD in abused children and adolescents (Cohen, 2001a; Cohen, Perel, DeBellis, Friedman, & Putnam, 2002). One RCT has demonstrated the efficacy of a tricyclic antidepressant for preventing PTSD in acutely burned children (Robert, Blakeney, Villarreal, Rosenberg, & Meyer, 1999). Several RCTs demonstrating the efficacy of selective serotonin reuptake inhibitors (SSRIs) such as sertraline (Zoloft) and paroxetine (Paxil) in the treatment of PTSD have included adult victims of child abuse but these results do not imply equivalent efficacy in children or adolescents. At least two RCTs examining the efficacy of Sertraline for child and adolescent PTSD are currently underway (Cohen, 2001b; Pfizer, 2002).

Empirical treatment studies for SUD in adolescents

A small but growing number of randomized controlled treatment studies using well-defined treatments have evaluated improvement in SUD and other mental health outcomes for substance abusing adolescents (Bruner & Fishman, 1998). Such research has indicated that the most important variables in predicting successful treatment response in adolescent SUD are the *specific therapeutic components* provided in treatment (i.e., family and/or cognitive behavioral interventions), and the *training and experience of the treatment providers*, rather than the treatment setting (inpatient, outpatient, residential) (Kaminer, 1994, 1996). Therapist characteris-

tics, which have been found to contribute to treatment success in youth with SUD, include more extensive professional experience and training, and greater competence in providing treatment which is cognitive behaviorally oriented (Friedman, Schwartz, & Utada, 1989). The literature also suggests that therapists having a personal history of SUD does not have a positive impact on treatment outcome in adolescents with SUD (Catalano, Hawkins, & Wells, 1990–1991).

Cognitive-behavioral and family therapies

Provision of family therapy and cognitive behavioral-type interventions (CBT) have been found to most strongly predict reduction in adolescent problem behavior and substance usage (Barrett, Simpson, & Lehman, 1988; Liddle & Dakof, 1995; Szapocznik, Kurtines, Foote, Perez-Vidal, & Hervis, 1986; Williams & Chang, 2000). A series of studies with high risk adolescents demonstrated that school-based group CBT interventions (social reinforcement for positive behaviors; social skills training; interpersonal problem-solving skills) combined with family-based CBT (problem-solving skills to reduce blaming and familial conflict; development and maintenance of contingency reinforcement plans for problematic behaviors) was superior to school-based interventions alone in decreasing SUD as well as delinquent behaviors (Bry & Attaway, 2001).

Another set of studies examined the efficacy of a combined family and CBT model, Multidimensional Family Therapy (MDFT). MDFT included the following components: focusing on individual teen and parent functioning, shaping parental skills, improving parent-child interactions and facilitating change with multiple family members through establishing a supportive environment, encouraging affective expression, developing a collaborative treatment agenda, and exploring behavior in a developmental context. This intervention was superior to either multifamily educational intervention or adolescent group therapy (Liddle & Hogue, 2001). Additionally, although individual CBT (provided to the adolescent with no parental treatment) and MDFT were equally effective in decreasing substance abuse at posttreatment, MDFT was superior to individual CBT in producing sustained improvement after the end of treatment (Liddle & Hogue, 2001).

Motivational Interviewing (MI), which integrates CBT and client-centered approaches to facilitate recognition of problematic behaviors and enhancing self-efficacy in reducing such behaviors, has been found to be superior to standard hospital care when provided to adolescents with SUD when they are seen in the emergency department setting. Advantages of MI included decreased drinking and driving, and decreased alcohol-related injuries compared to the non-MI group (Barnett, Monti, & Wood, 2001).

Another series of studies demonstrated that combined manualized individual and family based CBT interventions, which included improving communication between parents and adolescents, anger management skills, increasing reciprocity awareness, contingency management of problematic behaviors, recognizing and planning for substance abuse triggers, and cognitive problem-solving techniques, was superior to supportive counseling in decreasing SUD, depression, relationship problems, and school absenteeism in adolescents (Azrin, Donahue, Besalel, Kogan, & Acierno, 1994; Azrin et al., *in press*; Donohue & Azrin, 2001). Cognitive-behavioral interventions such as Relapse Prevention (RP), which examines antecedents to substance use and develops specific behavioral and emotional strategies for coping with such situations

without substance use (Kaminer, 1994; Kaminer & Bukstein, 1992; Marlatt & Gordon, 1985) and use of manualized treatments with cognitive problem-solving strategies, social skills, behavioral incentives, and relaxation techniques have been found to be superior to supportive counseling or peer interactional therapy in decreasing adolescent substance abuse (Kaminer, Burleson, & Blitz, 1998).

Multisystemic therapy (MST) has been specifically adapted for use in delinquent youth with SUD (Randall, Henggeler, Cunningham, Rowland, & Swenson, 2001). This intervention includes very intensive home-based treatment with a strong parental treatment component. It additionally includes frequent random urine drug testing, identification of drug use triggers and strategies for managing these triggers, and drug avoidance skill building. Although MST has been found to be superior to usual treatment in decreasing SUD and delinquent behaviors, the cost and labor intensity of this treatment approach may limit its general availability. In summary, treatment models which include strong family and/or CBT components have the strongest evidence of efficacy in decreasing SUD and related problems.

Twelve-step programs

Despite the popularity of Alcoholics Anonymous/Narcotics Anonymous (AA/NA), the Minnesota Model and other 12-step oriented programs, and the fact that the majority of inpatient, outpatient and day hospital drug and alcohol treatment programs in the US adhere to this treatment model (Kassel & Jackson, 2001; Weiss, 1999), no empirical studies have demonstrated these programs to be comparable in efficacy to other well-defined treatments in adolescents (Kassel & Jackson, 2001). Studies of 12-step programs for adults have had mixed results (Emrick, Tonigan, & Montgomery, 1993). These programs may be less helpful for adolescents than for adults because they have “based their services primarily on their own specific philosophical orientation using procedures extrapolated from adult substance abuse treatment models . . . As originally conceived, AA was a program geared to facilitate abstinence and life change among chronic alcoholics who were both middle-aged and male. Thus, the extent to which AA may be developmentally inappropriate for adolescents must still be questioned” (Kassel & Jackson, 2001, p. 343). Since 12-step programs are typically provided in group settings, and youth with abuse-related PTSD are avoidant of discussing personal information which may be reminiscent of past traumas, 12-step programs may be even less effective for adolescents who have comorbid PTSD and SUD. New practice parameters for adolescent SUD recommend that AA or other 12-step programs be used only in conjunction with other SUD treatments (AACAP, 2002). Referral to 12-step programs may be most effective when adolescents are placed in programs or AA groups specifically for teens. Placing adolescents randomly in programs rather than matching treatment to stage of disease, level of substance abuse or age/developmental level may result in increased usage and exposure to drug culture as has been found in adults (McLellan et al., 1997). One study found that adolescents attend AA meetings and decrease usage more when there are other adolescents in their AA groups, and that groups composed primarily of adults may present a barrier to adolescent attendance or successful outcome (Kelly, Myers, & Brown, 2002).

Some research has indicated that substance abusing adolescents with histories of child abuse need more treatment services and have worse mental health and SUD outcomes than

non-abused youth with SUD (Grella & Joshi, 2003), and that more severe child abuse history was correlated with worse mental health outcomes following SUD treatment (Titus, Dennis, White, Scott, & Fink, 2003). The finding that standard 12-step SUD treatments have poorer outcomes for youth with child abuse histories has led to recommendations that youth SUD treatment programs more thoroughly assess for victimization history, and that victimization issues be included as a focus of treatment in these programs (Stevens, Murphy, & McKnight, 2003).

Pharmacologic treatments

There is evidence in adults that pharmacologic agents may be effective in increasing abstinence or preventing relapses in specific SUDs. Pharmacologic treatments include replacement therapy (i.e., replacing an illegal drug such as heroin with one that can be administered under more controlled conditions and therefore carry fewer risks, such as methadone or buprenorphine) aversion therapy (i.e., drugs that diminish or make very unpleasant the effect of using drugs, such as naltrexone for heroin addiction or disulfiram for alcoholism); craving reduction (medications thought to reduce craving for specific drugs); and treatment of comorbid psychiatric conditions (Bukstein & Kithas, 2002). Only one pharmacologic RCT has been published for adolescents with SUD (Geller et al., 1998); this study showed that lithium was superior to placebo in decreasing psychiatric and SUD symptoms in adolescents with comorbid bipolar disorder and SUD. Since recent practice guidelines (AACAP, 2002) suggest that total abstinence may not be a realistic goal for some adolescents, and replacement therapy has been found to be effective in young adults (Gunne & Gronbladh, 1984), RCTs using replacement therapies should be conducted for adolescents with SUD. Aversion treatments such as naltrexone and disulfiram have some efficacy in reducing relapse in young adult cocaine and heroin users (Bukstein & Kithas, 2002) so controlled treatment trials of these agents in adolescents should be considered as well. Because Sertraline has been found to be superior to placebo in improving both PTSD and SUD in adults with both disorders, RCTs of SSRIs should be conducted in adolescents with comorbid SUD and PTSD (Brady, Sonne, & Roberts, 1996).

Models of integrated treatment for PTSD and SUD

A few research groups have designed and tested TF-CBT interventions for adults with comorbid PTSD and SUD (Back, Dansky, Carroll, Foa, & Brady, 2001; Najavits, 1998, 2002; Najavits, Weiss, Shaw, & Meunz, 1998). In adult populations, these treatments have been found to improve PTSD symptoms, social adjustment, problem-solving abilities, depression, and to decrease both substance abuse and suicidality (Najavits et al., 1998). One of these treatment models, Seeking Safety (Najavits, 2002) has been adapted for use in adolescents. Although the original treatment model was provided in group format, the adaptation for adolescents was provided individually. The treatment is provided over 24 weeks and focuses on forming a close therapeutic alliance, collaborating with the adolescent in identifying treatment goals, improving self-control skills in order to manage overwhelming affect, enhancing prosocial behaviors, and teaching relapse prevention skills. A strong case-management component is included as well. In the adolescent adaptation, after these skills have been solidified, the adolescent is

also offered the option of discussing trauma details (exposure and cognition processing). This treatment plus treatment as usual (pharmacotherapy, AA and/or other psychotherapy) was compared to treatment as usual alone in a pilot randomized controlled trial of 33 adolescent females with PTSD and SUD, of whom 89% had experienced sexual abuse. Results of an intent to treat analysis indicated superior outcome for the seeking safety group on SUD, dissociation and sexual concerns, but not on PTSD, depression, anxiety or anger measures. It is likely that use of a larger sample and an optimal assessment instrument for posttreatment PTSD would have led to more significant differences between the two treatments (Najavits, Gallop, & Weiss, 2003). A phase-based treatment, which sequentially targets relational issues and trauma symptoms, has been found to be effective in treating adult survivors of child sexual abuse who have multiple problems including SUD; this treatment has also been adapted for and is currently being tested in traumatized adolescents who have high rates of SUD (Cloitre, Davis, & Mirvis, 2002).

Neither of these adolescent treatment models includes significant parental or family treatment components, perhaps because they were directly adapted from adult treatment models. Since addition of a parental component has been found to improve adolescent outcomes significantly in both sexual abuse (Deblinger et al., 1996) and SUD treatment studies (Liddle & Hogue, 2001), it is possible that including parents in these integrated models would improve outcomes for those adolescents whose primary PTSD trauma was sexual abuse.

Interestingly, new recommendations for treating comorbid SUD and depression in adolescents have suggested a similarly integrated approach (Riggs & Davies, 2002). In addition to careful assessment, these authors recommend the following approach for treating comorbid SUD and depression in youth: (1) use of motivational techniques to form a strong treatment alliance and to encourage rapid reduction or discontinuation of substance use; (2) use of empirically supported SUD treatments (family-based, CBT, CM approaches); (3) use of appropriate pharmacotherapy for depression (with close monitoring of urine toxicology, medication compliance, and symptom response); (4) use of empirically supported individual and family psychotherapy for depression; (5) adjunctive referral to 12-step program for some adolescents; (6) referral to more intensive treatment if improvement is not noted within two months; and (7) use of relapse prevention strategies.

Components of integrated treatment for abuse-related PTSD and SUD in adolescents

The specific treatment components common to empirically supported treatments for adolescent abuse-related PTSD and adolescent SUD, and elements of integrated treatments shown to improve outcome in adults with comorbid PTSD and SUD suggest potentially effective integrated interventions for adolescents with comorbid abuse-related PTSD and SUD. These include the following:

1. Establishment of a consistent and trusting therapeutic relationship which includes collaborative empiricism (working together to identify workable solutions to the adolescent's problems), structure (the therapist implements defined treatment components which are clearly explained to the adolescent), and flexibility (creative and individualized im-

plementation of prescribed treatment components, including adjusting the number of sessions needed to achieve each treatment component and the order in which different components are introduced).

2. Enhancing stress management skills (increased awareness of mind-body connections, learning and consolidating relaxation, focused breathing and positive self-talk skills).
3. Improving identification, expression and modulation of negative affective states (recognizing antecedents to negative feelings such as abuse reminders, self-blame, perceived stigmatization or interpersonal rejection, and so forth, and developing personalized self-soothing/affective modulation skills).
4. Recognizing, challenging, and correcting inaccurate cognitions which contribute to negative affective states and/or self-destructive behaviors such as SUD (relationships between thoughts, feelings and behaviors; replacing inaccurate/unhelpful cognitions with more accurate/helpful ones).
5. Enhancing problem-solving, drug refusal, and safety skills (recognizing situations in which the adolescent is at risk of substance abuse or of being victimized, developing specific behavioral and emotional strategies for avoiding these outcomes).
6. Enhancing social skills (accurately interpreting interpersonal behaviors of others, increasing insight into others' reactions to one's own behaviors, enhancing ability to communicate needs to others in an effective and prosocial manner, improved tolerance of and coping with interpersonal disappointments).
7. Utilizing gradual exposure techniques to facilitate the creation of a narrative of past child abuse and other traumatic experiences (desensitization to abuse reminders, decreased use of avoidant strategies and increased use of active coping when abuse reminders occur, putting past abuse/traumas in appropriate context of youth's whole life, correcting abuse-related cognitive distortions regarding self-blame, stigmatization, powerlessness, etc.).
8. Involving parents in treatment, including enhancing parenting skills (having developmentally appropriate expectations; learning the appropriate use of praise, active ignoring, and contingency reinforcement programs), improving parent-adolescent communication (through joint sessions and modeling/reinforcing parental support of appropriate youth self-expression), exploration and correction of parental behaviors which may contribute to youth SUD or PTSD symptoms (i.e., poor supervision, parental SUD or tolerance of youth SUD; parental modeling of avoidance of discussing child abuse or SUD issues, etc.), decreasing intrafamilial conflict and blaming, contracting for nonviolence in physically abusive families.
9. Providing psychoeducation about PTSD and SUD (risk factors, symptoms, typical patterns and progression of symptoms, availability of effective treatments, etc.).
10. Using random urine drug screening to identify covert substance abuse with agreed upon and consistently implemented consequences for positive screens.
11. Use of adjunctive psychopharmacologic treatments to target specific PTSD symptoms or symptom clusters, and to reduce SUD as self-medication for PTSD symptoms.
12. Possible referral to adjunctive adolescent-only AA programs if the adolescent is well matched to the group with relation to stage and severity of SUD and developmental level.

Optimizing use of integrating treatments

Improved assessment strategies, reconciliation of divergent treatment philosophies, increased adoption of empirically supported treatments and changes in therapist attitudes may facilitate the use of optimal integrated treatment for adolescents with comorbid abuse-related PTSD and SUD.

Improved assessment strategies

Child abuse, PTSD, and SUD are all under-recognized and undertreated in adolescents (AACAP, 1998, 2002). Child abuse and adolescent SUD treatment programs (as well as other mental health providers) should conduct comprehensive assessments at intake, which systematically inquire about child abuse experiences, PTSD symptoms, and SUD behaviors. Staff conducting assessments should have appropriate qualifications, training and experience in diagnosing mental disorders (including SUD) in adolescents, and access to expert psychiatric consultation when needed. Parents or other informed adults should be included in the evaluation process. Because PTSD is frequently misdiagnosed as another psychiatric disorder (AACAP, 1998), and because adolescents with SUD frequently deny or minimize their substance abuse, advanced training should be provided in these issues to therapists in abuse and SUD programs. Evaluators should also be aware that not all adolescent substance abusers with a history of child abuse have comorbid PTSD; such youth with primary SUD may be more appropriate for SUD treatment than integrated therapy.

Reconciliation of contradictory treatment philosophies

As discussed above, empirically supported treatments for adolescent PTSD and adolescent SUD share both similar treatment components and similar philosophies of empowering clients, preferring collaborative over confrontational interventions, and inclusion of parent/family treatment components in which parents actively collaborate in treatment planning. In contrast, most adolescent SUD programs are 12-step oriented, and adhere to the disease model of addiction (Weiss, 1999). This model views addiction as a neurobiologically based life-long dependency disease which requires the replacement of negative dependency (on drugs or alcohol) with positive dependency (on AA or other 12-step program). These programs tend to rely on adherence to strict behavioral rules and guidelines for spiritual living over teaching new generalizable skills (Kassel & Jackson, 2001; Weiss, 1999) which may be problematic for abused adolescents who are already struggling with feelings of powerlessness (Finkelhor, 1987).

Twelve-step programs also rely heavily on peer confrontation (Weiss, 1999, pp. 414–415). Indeed, adolescents may be confronted more harshly in these programs than older substance abusers on the presumption that they have not yet “hit bottom” or had as many negative consequences from SUD as older users and need more “intensive” treatment. In this confrontational model, an adolescent’s “reluctance to accept the leader’s or group’s perspective unconditionally is interpreted as denial” (Kaminer, 1994, p. 219), leading to even greater confrontation. It has been noted that such interventions may “unwittingly encourage inauthentic or com-

pliant behavior because the only way members can gain support is by adopting the group's views about themselves" (Cartwright, 1987, p. 952). Group confrontation may be particularly problematic for adolescents with child abuse-related PTSD, as it may inadvertently reinforce shame, self-blame, and stigmatization in these adolescents. As noted earlier, these characteristics are predictive of worse mental health outcomes in abused adolescents (Barker-Collo & Read, 2003; Feiring, Taska, & Lewis, 2002). Some 12-step providers label parental efforts to influence treatment decisions as being indicative of "co-dependency," especially if parents question or challenge the ideological basis of the 12-step model (Kassel & Jackson, 2001, p. 345), whereas collaborative parental involvement in treatment planning has been shown to improve outcome for abused youth as well as those with SUD. These philosophical differences need to be reconciled by providers attempting to implement empirically supported components of integrated treatments for adolescents with comorbid PTSD and SUD.

Increased adoption of empirically supported treatment components; changing therapists' attitudes

Despite the growing number of empirically supported treatments for adolescent PTSD and SUD, these interventions are not widely used in clinical settings (Cohen, Mannarino, & Rogal, 2001; Kassel & Jackson, 2001). This failure to adopt evidence-based treatments (EBT) is apparent in other areas of adolescent mental health (Weersing & Weisz, 2002) and medical care (Grinshaw & Russell, 1993). Suggested reasons for this failure include therapists' perceptions that EBTs are not suitable for their clients (based on the idea that research trials exclude difficult patients with multiple comorbidities) and/or that EBTs are inflexible "cookbook" approaches that minimize the importance of the therapeutic relationship and the therapist's skills and judgment (Connor-Smith & Weisz, 2003). Additionally, since EBTs are different from most therapists' usual treatment practices and because consultation and supervision in the use of EBTs are not readily available, even after receiving training in EBT, therapists tend to return to their previous treatment practices whenever difficulties in implementing EBTs arise (Connor-Smith & Weisz, 2003).

Therapists' training and theoretical orientation may also influence how readily they accept EBTs, which for adolescent PTSD and SUD are primarily cognitive-behavioral and family based. The Institute of Medicine (1998, p. 44) suggests that SUD therapists, most of whom obtained on-the-job training or addiction certification in the absence of graduate degrees, may be less likely to adopt EBTs than other mental health therapists, most of whom have received master's or doctoral graduate training. The Institute of Medicine (1998) and other authors (Cook, 1988; Mulligan, McCarty, Potter, & Krakow, 1989) further suggest that since many staff in youth SUD programs have a personal history of SUD and have achieved abstinence through participation in 12-step programs, they have more faith in this intervention which worked for them personally than in EBTs.

In a parallel manner, therapists in child abuse programs may have personal histories of child abuse which influence their attitudes towards or against EBTs. Additionally, since funding for SUD programs is separate from that for mental health problems, child abuse therapists may have had little or no experience treating adolescents with SUD, and may believe that such treatment is unique and distinct from other types of psychotherapy. In fact, the "world of

addiction” in which some adolescent substance abusers are immersed, may indeed be foreign to many child abuse therapists. However, the EBTs for adolescent SUD overlap a great deal with those for adolescent PTSD, indicating that they are not as different from these treatments as some child abuse therapists may believe. Thus, both SUD and child abuse therapists’ beliefs and attitudes may present barriers to providing optimal integrated treatment to adolescents with comorbid PTSD and SUD.

Effectively addressing these barriers to accepting and implementing EBT components may increase the likelihood of both SUD and child abuse therapists providing integrated treatments for adolescents with comorbid PTSD and SUD. Developers and trainers in EBTs for these conditions will need to modify their treatment manuals and training methods in order to be respectful of and responsive to these barriers. For example, encouraging flexibility in how these treatments are implemented by community therapists may improve such therapists’ willingness to adopt such treatments as their own (Berwick, 2003). Providing ongoing expert consultation or supervision in EBT components which are common to both types of treatment may also assist therapists in implementing integrated treatments.

The Substance Abuse and Mental Health Services Administration (SAMHSA)-funded National Child Traumatic Stress Network (NCTSN, 2002) includes as a primary goal the development and dissemination of evidence-based, developmentally sound interventions for traumatized children and their families. This initiative is specifically evaluating methods for optimally transporting EBTs for child and adolescent PTSD and other comorbid conditions, for broader use in community settings. These methods may be useful in increasing the adoption and adaptation of evidence-based treatments for youth with comorbid PTSD and SUD.

The need for more treatment research

Finally, expanding the available empirical knowledge base requires additional research into the treatment of abused and otherwise traumatized youth with SUD. To our knowledge, only one treatment study has explicitly evaluated any treatment specifically for this population (Najavits, 1998). The potential for serious, life-long impairment should compel researchers to devote greater attention and funding agencies to devote more resources to evaluating optimal treatments for abused and otherwise traumatized youth with SUDs. Child abuse treatment researchers should attempt to include at least some subset of adolescents with comorbid SUDs in their treatment protocols, and include SUD as an outcome variable. Conversely, treatment studies for adolescent SUD should consider including youth with comorbid PTSD in these trials, should assess participants for child abuse and other trauma history, and should include PTSD as an outcome measure.

Recommendations for treating adolescents with abuse-related PTSD and SUD

The following recommendations attempt to synthesize the above information into practical guidelines for optimizing current treatment for adolescents with abuse-related PTSD and SUD.

1. Adolescents presenting for mental health or substance abuse treatment should receive comprehensive assessments which include evaluation of child abuse and other trauma exposure, PTSD symptomatology, and SUD.
2. Parents or other informed caretakers should be included in the assessment and treatment process in a respectful and collaborative manner.
3. Adolescents with coexisting PTSD (or prominence of PTSD symptoms in the absence of full diagnostic criteria) and SUD should receive integrated treatment for both disorders when possible. If the adolescent refuses treatment for one disorder, treatment for the other disorder should still be offered.
4. Therapists in both types of programs should develop individualized treatment plans based on the adolescent's personal strengths and deficits as well as the family's needs. This necessitates an in-depth understanding of the adolescent's psychiatric and SUD history, intrapsychic issues and personal abuse and SUD triggers.
5. Treatment for both disorders should incorporate treatment recommendations from developmentally informed guidelines and practice parameters (i.e., those specific to children and adolescents), and should be informed by empirical evidence supporting treatment efficacy of specific treatment models.
6. Components of effective treatment models for adolescent SUD and abuse-related PTSD overlap to a great extent. These are described in detail above. Therapists providing integrated treatment for these comorbid conditions should consider inclusion of these components in treatment.
7. Child abuse therapists should seek out educational opportunities to enhance their knowledge about SUDs and empirically supported treatments for adolescent SUD. When possible, child abuse and trauma programs should obtain ongoing consultation from a SUD provider with expertise in such treatments, and should consider adding mental health therapists with expertise in treating SUD to their staff.
8. Youth SUD programs should seek training and ongoing consultation regarding evidence-based treatments for adolescent PTSD and when possible, should consider adding a master's or doctoral level therapist to their staff with expertise in such treatment.
9. Youth child abuse and SUD programs should have access to adequate child and adolescent psychiatric consultation time to provide appropriate pharmacologic treatment for PTSD and other psychiatric conditions, and to provide assessment expertise when needed.
10. Child abuse and SUD therapists treating adolescents should attempt to enhance and expand communication, knowledge about each other's programs, and collaborative educational opportunities.
11. Models of integrated treatment which incorporate elements of EBTs for child abuse-related PTSD and adolescent SUD should be manualized and tested in randomized controlled trials.

Treatment studies for abused and otherwise traumatized adolescents with PTSD should include assessment of SUD, and SUD should be included as an outcome variable. Treatment studies for adolescent SUD should include assessment of abuse/trauma history and PTSD

symptoms should be included as an outcome variable if such studies include youth with this comorbidity.

Conclusions

Child maltreatment predisposes adolescents to developing both PTSD and SUD. The broader use of integrated, empirically derived treatments for these disorders and an increase in treatment research for youth with both disorders will greatly enhance the ability to provide the best possible treatment to adolescents with abuse-related PTSD and SUD.

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Résumé

Objectif: Être abusé sexuellement constitue un facteur de risque pour l'apparition de troubles posttraumatiques (PTSD) et de troubles ultérieurs liés à l'usage de stupéfiants (SUD). Cette revue a pour but de résumer ce qui est admis actuellement sur le traitement des adolescents abusés présentant PTSD et SUD et sur l'occurrence conjointe de ces conditions.

Méthode: On a procédé à une revue, à un résumé et à une synthèse de la littérature sur les études empiriques concernant le traitement des adolescents dans les conditions mentionnées.

Résultats: Les études randomisées et contrôlées des cas de PTSD et SUD en relation avec des abus sexuels ont montré l'efficacité des traitements à composantes comportementales et cognitives pour les individus et les familles. Ces composantes se recouvrent considérablement dans les traitements à base empirique pour chaque désordre. Une approche de traitement intégré est décrite, à utiliser pour les adolescents présentant PTSD ou SUD en relation avec des abus sexuels. Des recommandations sont faites pour améliorer les services pour cette population et pour les recherches à venir.

Conclusions: Les connaissances disponibles sur l'efficacité des traitements suggèrent que le traitement intégré comportemental et cognitif de la famille et des adolescents présentant PTSD et SUD conjointement avec des abus sexuels subis peut améliorer les résultats pour cette population.

Resumen

Objetivo: El abuso contra los niños es un factor de riesgo para desarrollar el Desorden de Estrés Post traumático (PTSD) y el Desorden de Abuso de Sustancia subsiguiente. El propósito de esta revisión es resumir los conocimientos presentes acerca de tratamientos efectivos para adolescentes relacionados con el PTSD, el SUD, y la copresencia de estas condiciones.

Método: La literatura sobre estudios empíricos acerca del tratamiento de estas condiciones en la adolescencia fue revisada, resumida y sintetizada.

Resultados: Estudios controlados con muestreo al azar del abuso relacionado con el PTSD y el SUD en adolescentes apoyan la eficacia de componentes de tratamiento individual y familiar con base cognitivo-conductual. Los componentes se sobreponen considerablemente en los tratamientos apoyados empíricamente para cada desorden. Se describe un tratamiento con enfoque integrado para el uso en adolescentes con abuso relacionado con el PTSD y el SUD, con recomendaciones para optimizar los servicios para esta población y para futuras investigaciones.

Conclusiones: La evidencia disponible sobre tratamientos efectivos sugiere que el tratamiento cognitivo-conductual y familiar integrado, dirigido a adolescentes con síntomas relacionados del PTSD y el SUD, puede optimizar los resultados para esta población.