Evaluation of a Cognitive-behavioral Group Therapy Program for the Treatment of Posttraumatic Stress Disorder in Female Juvenile Delinquents in Residential Placements

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EVALUATION OF A COGNITIVE-BEHAVIORAL GROUP THERAPY PROGRAM
FOR THE TREATMENT OF POSTTRAUMATIC STRESS DISORDER IN FEMALE
JUVENILE DELINQUENTS IN RESIDENTIAL PLACEMENTS

By Jane Heesen Knapp
Submitted in Partial Fulfillment of the Requirements for the Degree of
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DEPARTMENT OF PSYCHOLOGY

Dissertation Approval

This is to certify that the thesis presented to us by Jane Heesen Knapp on the 27th day of July, 2006, in partial fulfillment of the requirements for the degree of Doctor of Psychology, has been examined and is acceptable in both scholarship and literary quality.

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The entire PTSD project was the innovation of Daniel P. Elby, the cofounder of the Alternative Rehabilitation Communities, Inc., (ARC) and leader in the residential treatment of delinquent youth for more than 30 years, and of Ronald Sharp, Ed., D., director of psychological services at ARC. They recognized the problem of untreated PTSD in the female juvenile offender population and made a comprehensive plan to address it. Their vision included not only the development of the ARC PTSD Group Therapy Manual, but also a comprehensive program to train the staff who work with delinquent females in residential programs throughout Pennsylvania, juvenile court judges, and staff from alternative education programs in the understanding and treatment of PTSD.

Francine Slavik, project coordinator for the development of the ARC PTSD Group Therapy Program and coauthor of the ARC PTSD Group Therapy Manual, was my right-hand person in developing ARC PTSD Groups and the training program for group facilitators. Her deep understanding of the behavioral and emotional needs of female juvenile offenders and the educational needs of program staff, as well as her humor and support, helped to make ARC PTSD Groups beneficial for the females who participate in them and user-friendly for the facilitators who lead them.
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ABSTRACT

Female juvenile delinquents have a high incidence of posttraumatic stress disorder (PTSD). Residential treatment programs for female juvenile offenders typically lack gender-specific programming and empirically supported treatment protocols. This study attempted to examine the effectiveness of the Alternative Rehabilitation Communities, Inc., Group Therapy Program for Female Juvenile Delinquents with Posttraumatic Stress Disorder (Alternative Rehabilitation Community, 2004). This manual-based treatment program was conducted in 5 residential treatment agencies in Pennsylvania. Two comparable agencies served as comparison sites. Data was obtained from a larger study performed by the University of Pittsburgh Office of Child Development Division of Planning and Evaluation, which had received a grant from the Pennsylvania Commission on Crime and Delinquency to conduct process and outcomes research on this program. It was hypothesized that the treatment program would significantly reduce PTSD symptoms, increase prosocial behaviors, decrease antisocial cognitions, and improve outlook toward the future of participants in the treatment group, and that treatment satisfaction would be related to participants' outcomes on the dependent measures. However, only 10 participants (5 from treatment sites and 5 from comparison sites) completed posttests and essential data was missing from their assessments. Consequently, conclusions could not be drawn, apart from preliminary evidence that the females who participated in ARC PTSD Groups perceived that they benefited from them in terms of managing their PTSD symptoms and regulating their emotions. A postmortem follow-up showed that 96 females actually completed treatment groups, but that data was not
collected on 91 of them for reasons described herein. The discussion outlines and offers solutions to problems in conducting research with this challenging population.
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Table 1. Descriptive Statistics for the PTSD Group Participant Survey
INTRODUCTION

A history of exposure to trauma and posttraumatic stress disorder (PTSD) are common factors among many female juvenile delinquents (Cauffman, Feldman, Waterman, & Steiner, 1998; Committee on Adolescence of the American Academy of Pediatrics, 2001; Greenwald, 2002a; Scott, 1999; Wolfe, Scott, Wekerle, & Pittman, 2001). Research has demonstrated the fact that delinquent, incarcerated adolescents have had more traumatic experiences, including witnessing the trauma of others, than the general adolescent population. They also are more likely to have PTSD than the norm (Cauffman et al., 1998; Farber & Zajac, 2004; Griffin, 2001; Wood, Foy, Goguen, Pynoos, & James, 2002). Admission reports from juvenile correctional care facilities indicate that the majority of adolescents recount histories of significant emotional or physical trauma (Committee on Adolescence of the American Academy of Pediatrics, 2001). It is vital to assess and treat PTSD in residential treatment facilities for female juvenile delinquents because childhood trauma places survivors at risk for problems, such as substandard academic performance, mental illness, interpersonal deficits, aggression, substance abuse, and delinquent behavior (International Society for Traumatic Stress Studies, 1993).

Historically, the juvenile justice system has lacked appropriate non-secure placements for female adolescent offenders and has typically placed them in training and reform schools and in detention centers (Chesney-Lind & Shelden, 1998). The pathways to delinquent behavior have been better studied and better understood for males than for females (Chamberlain & Moore, 2002). This has resulted in the development of a range of specialized residential placements for males with conduct disorder, mental health
issues, sexual offenses, and cognitive impairment. Female juvenile delinquents, on the other hand, are more likely to be placed in detention centers for lengthy periods of time and to receive harsher treatment or to be locked up for minor infractions (Chamberlain & Moore, 2002). Detention centers typically have had underdeveloped programming. Studies have demonstrated patterns of intolerable treatment, including verbal, physical, and sexual abuse in female juvenile corrections programs. Crises are often handled by use of isolation and/or physical restraint which can trigger or exacerbate symptoms of PTSD (Abram et al., 2004). The few specialized juvenile programs that exist for females receive lesser budgetary, educational, vocational, medical, and recreational resources than their male counterparts (Krisberg, 2005).

The Alternative Rehabilitation Communities' (ARC) PTSD Program

Recognizing the need for appropriate treatment for female juvenile offenders, the Office of Juvenile Justice and Delinquency Prevention identified services for delinquent young women as a national priority in 1992 and established a Challenge Grant Initiative to help states create gender-specific services for delinquent females. ARC, a private Pennsylvania agency that offers a range of residential services for juvenile offenders, responded to this initiative. In 1999, they were awarded a grant from the Pennsylvania Commission on Crime and Delinquency to develop and field test a group therapy manual (Alternative Rehabilitation Community, 2004; hereafter referred to as the ARC PTSD Group Therapy Manual) for the treatment of female juvenile delinquents who had PTSD and were court-ordered into residential treatment programs. They also received a State Challenge Grant “to oversee a massive statewide PTSD education and training program for juvenile justice professionals”; these included “juvenile judges, line officers and
chiefs of juvenile probation departments, juvenile detention center administrators and staff, and residential service personnel, as well as police, child welfare and community agency staff who come into contact with adolescent females” (Griffin, 2001, p. 4).

ARC appointed a consultant (the author) and a program coordinator (Francine Slavik) at the end of 1999 to develop the ARC PTSD Group Therapy Manual. Between 2000 and 2004, ARC completed the ARC PTSD Group Therapy Manual and trained staff from more than 10 agencies throughout Pennsylvania to implement treatment groups within their agencies; they pilot tested the program in six agencies, revised the ARC PTSD Group Therapy Manual according to results of the pilot testing, and developed the ARC PTSD Group Facilitator Certification Program to further expand the program.

In early 2000, ARC formed a workgroup of 15 people, the majority of whom were women, from a variety of cultural backgrounds and from all facets of the Pennsylvania juvenile justice community to describe deficiencies in the treatment of females in the juvenile justice system and to make recommendations on and advise the development of the ARC PTSD Group Therapy Manual. It became apparent in the workgroup discussions that the majority of the residential agencies for delinquent females in Pennsylvania had many noncertified and paraprofessional staff and few, if any, licensed mental health professionals. Thus, the ARC PTSD Group Therapy Manual was developed so that it could be implemented by these uncertified staff members. In addition, several juvenile offenders from ARC’s group home for females met in order to make recommendations regarding group activities and elements that would best enable them to talk and learn about trauma issues. The ARC PTSD Group Therapy Manual incorporated the
recommendations of the workgroup, the preferences of the females, and the techniques from the literature that were shown to be effective.

In October 2003, the University of Pittsburgh Office of Child Development Division of Planning and Evaluation (hereafter referred to as the University of Pittsburgh) was awarded a grant by the Pennsylvania Commission on Crime and Delinquency to evaluate the effectiveness of the ARC PTSD Group Therapy Manual. This project, entitled Evaluation of PTSD/Gender Specific Services Project, would examine the implementation of the ARC’s PTSD Groups, review the ARC PTSD Group Therapy Manual, and assess treatment effectiveness (Zajac & Puzzanchera, 2003).

This study utilizes a subset of the data that was generated by the University of Pittsburgh to compare females who completed the ARC PTSD Group Therapy Program with females from comparison agencies which did not use ARC PTSD Groups. All of the agencies were residential treatment programs located throughout Pennsylvania. The study examines outcomes in terms of the reduction of PTSD symptoms, the increase of prosocial behaviors, the improvement in participants’ outlook toward the future, the decrease of antisocial cognitive distortions, and PTSD group participants’ satisfaction with the program.

The following section begins with the premise that a history of childhood trauma and PTSD are potential pathways toward female juvenile delinquency. It includes a review of the therapies that are in the forefront for treating PTSD and the rationale for the interventions selected for the ARC PTSD Group Therapy Manual. A description of the ARC PTSD Group Therapy Program and the initial pilot study that provided preliminary support for the program ensues. This is followed by a description of the University of
Pittsburgh study and the results of its recent process evaluation. The section concludes with the consequences of not treating PTSD in female juvenile offenders and with the study's research hypotheses.

**Trauma and PTSD as Potential Pathways to Female Delinquency**

Little is known about predictive or protective factors for the development of delinquency in females (Chamberlain & Moore, 2002). Loeber (1991) defined a pathway as "a common pattern of development shared by a group of individuals, which is distinct from the behavioral development experienced by other groups of individuals" (p. 98). The following events have been suggested in the literature as potential pathways for delinquency in females: (a) exposure to trauma and/or PTSD, (b) family dysfunction, and (c) high incidences of psychological disorders such as depression and anxiety (Chamberlain & Moore, 2002). This section explains trauma and PTSD as potential mediators of female delinquency. It begins with statistics about female adolescent crime, reviews research that links trauma and PTSD to female delinquency, reports Pennsylvania statistics, and describes the effect of trauma and PTSD on the developing child.

**Female Adolescent Crime in the United States**

Although overall crime rates in the United States have decreased in the 1990's, female adolescent crime increased 23% between 1989 and 1993. Moreover, the number of severe female juvenile crimes, including murder, aggravated assault, rape, and robbery, rose 55% during that time period (Cauffman et al., 1998). In 1997 alone, police arrested nearly three quarters of a million females under the age of 18 (National Mental Health Association, 2001; Whaley & Koenen, 2001).
Crimes of young females, however, tend to be less violent than those of young males. In 1997, females were responsible for 16% of violent adolescent crimes, 28% of serious property crimes, 56% of prostitution and commercialized vice, and 58% of runaway arrests (Krisberg, 2005; Snyder & Sickmund, 1999). Female delinquency has tended to be overlooked and understudied because adolescent female offenses, such as truancy, running away, prostitution, underage drinking, substance abuse, and incorrigibility have tended to be victimless, self-destructive, and less violent than male offenses. Females tend to run away from abuse, particularly abuse that occurs in their own home. Furthermore, crimes such as theft, prostitution, and other delinquent acts may actually be “attempts to pull themselves out of their dismal circumstances” (Chesney-Lind & Shelden, 1998; p. 209).

Annually, more than 5 million children experience a trauma, including motor vehicle accidents, natural and man-made disasters, life-threatening and/or extremely painful illnesses, physical abuse, sexual abuse, assault, kidnapping, the sudden death of a parent, and witnessing domestic or community violence (Perry & Azad, 1999). Throughout childhood and adolescence, females are twice as likely as boys to experience sexual abuse. A growing body of research shows that female delinquents have higher incidences of PTSD (14.7% to 65%; see PTSD in Female Juvenile Delinquents, below) than male and female adolescents from community samples in which the lifetime prevalence of PTSD ranges from 6.3% to 7.8% (Abram et al., 2004).
Pennsylvania Statistics

Females compose 25% of the total juvenile arrests in Pennsylvania (Zawacki, 2005, October). Between 1994 and 2003, female juvenile arrests increased by 21%, but those of males decreased by 3%. The most common delinquent offences for females were disorderly conduct (17%), larceny-theft (12%), and simple assault (9%). Running away, which is treated as a status offence, however, made up the largest percentage (more than 50%) of arrests for females.

Since August 2001, the Massachusetts Youth Screening Instrument, Version 2 (MAYSI-2; Grisso & Barnum, 2003) has been administered to adolescents in 20 of Pennsylvania’s 23 secure detention facilities. Between that time and February 2005, 5,537 females have been screened with this instrument on the following domains: Alcohol/Drug Use, Angry-Irritable, Depressed-Anxious, Somatic Complaints, Suicide Ideation, Thought Disturbance, and Traumatic Experiences. Results indicated that for the Traumatic Experiences domain, 42% of females scored above the Caution cutoff, indicating “possible clinical significance” and 26% scored above the Warning cutoff, reflecting the fact that they were strongly in need of behavioral health assessment and treatment in this area (Zawacki, 2005, October).

PTSD and the Developing Child

PTSD occurs when, after exposure to a traumatic event that includes real or potential harm to self or others, a person (a) re-experiences the event through recurrent thoughts or images, (b) persistently avoids thoughts or circumstances associated with the trauma, and (c) has persistent physiological arousal or decreased or absent emotional responsiveness (American Psychiatric Association, 2000; J. G. Beck & Coffey, 2005).
The symptoms must occur or continue one month or more after the exposure to the trauma and must be serious enough to cause the individual extreme distress and interfere with daily functioning. Examples of traumatic events include serious accidents, natural disasters, criminal and sexual assaults, military combat, child physical or sexual abuse, child neglect, hostage situations, imprisonment or torture, and the witnessing of or even the hearing of traumatic events (Foa, Davidson, & Frances, 1999). Symptoms of avoidance include the refusal to talk about the traumatic event, dissociation, constriction of affect and avoidance of persons, places, or things associated with the trauma. Intrusive experiences consist of sudden, unwanted events such as flashbacks, traumatic dreams, somatic sensations, and unwelcome thoughts or feelings related to the trauma. Hyperarousal may include being easily startled, being unable to sleep, and feeling extremely tense and on edge. In addition, pulse and blood pressure are often elevated in persons with PTSD (American Psychiatric Association, 2000; Foa, Davidson, & Frances, 1999).

According to Cohen, Berliner, and March (2000), PTSD may be manifested differently among children according to their developmental level. Preschool children who have less capacity for verbal expression may demonstrate symptoms of generalized anxiety such as fears of strangers, monsters, etc. Adolescents who have had chronic or severe trauma may be more likely to manifest dissociative symptoms, self-injurious behavior, substance abuse, outbursts of anger, or aggressive behavior. Thus, PTSD in children and adolescents must be viewed from a developmental perspective. The following sections describe the effect of PTSD on the developing child in terms of neurodevelopment and psychosocial development.
The Neurobiology of Trauma and PTSD

According to Perry (2002b), when children are exposed to violence in the home, in the media, in school, and/or in the community, they tend to adapt emotionally, behaviorally, cognitively, socially, and physiologically to chronic levels of threat and fear. They are prone to becoming violent themselves, not only through modeling or imitation of what they see, but also because of a persistent state of fight or flight. To understand how this occurs, it is necessary to examine brain development in children and the impact of trauma on neurodevelopment (Perry, 2002a). The following information is a composite of information obtained from key authors who reviewed and added to the literature on the neurobiology of PTSD. It explains how trauma and PTSD can lead to aggressive and delinquent behavior.

Throughout childhood and adolescence the brain continues to develop. Brain cells mature and specialize through a complex combination of genetics and environmental exposure. When children are exposed to violence and trauma in their environments, the ensuing stress response, which releases a cascade of neurotransmitters and hormones, may alter brain development (Streeck-Fischer & van der Kolk, 2000) by changing the ways in which new cells generate, migrate, form synapses, and differentiate (specialize) from each other (Perry, 2002b). Brain development is “use-dependent” for the purpose of survival. When neural systems are activated repeatedly by adaptation to chronic stress or severe trauma, changes in their patterns of response may become permanent. Children may become chronically hypervigilant, physiologically aroused, and attuned to nonverbal cues because this is adaptive for survival in environments where they must be prepared
for danger and for early signs of potential threat. Thus, children exposed to violence and trauma may develop an enduring fear response (Perry, 2002b).

The Fear Response

The fear response (also known as the fight-or-flight response) is a multifaceted neurophysiological reaction that arouses the entire body and changes cognitive, emotional, behavioral, and social functioning to prepare individuals to cope with physical emergencies (Smock, 1999). Although the forms, the severity, and the chronicity of threats vary, as do individual responses to it, the general response tends to include hyperarousal (fight or flight) or dissociation (a form of mental disengagement from the external world), or a combination of both. Infants and young children are more prone to dissociate because they lack the physical capacity to fight or flee. As humans mature they are more likely to fight or flee, unless they have been conditioned to dissociate as a result of early trauma (Perry, 1993, 2001).

The fight or flight reaction occurs in the brain, the hypothalamic-pituitary adrenocortical (HPA) axis, the autonomic nervous system, and the immune system (Perry, 1993). During the fear response, the HPA is activated. Hormones, such as adrenocorticotropin hormone, cortisol, and epinephrine are released. The tone of the peripheral sympathetic nervous system is increased to enable escape or aggression. Neurochemical systems in the central nervous system are also activated (Perry, 1993).

During the fear response, the heart rate increases to circulate blood throughout the body. The blood becomes enriched as the lungs dilate to increase oxygen and the liver releases glucose. All this occurs to prepare the muscles for action. Vision becomes more
acute as pupils dilate to let in more light. Perspiration cools the body in the event that extensive physical exertion will be necessary. Overall this automatic, adaptive response gives persons an advantage when danger is imminent (Smock, 1999).

The stress response is rapid and reversible. However, trauma that is extended in duration (e.g., in chronic physical or sexual abuse) or great in intensity (e.g., being held at gunpoint) can actually alter brain development in children. When this occurs, the neurochemical systems that mediate the stress response become more sensitive than is normal to stress. Through a complex process that is not well understood, structural changes occur in the networks responsible for sensitization, learning, and memory. Furthermore, the catecholamine (norepinephrine, dopamine, and epinephrine) response becomes altered and more sensitive. This results in an increased startle response, increased autonomic system reactivity, anxiety, and dysphoria, all of which may occur in children with PTSD (Perry, 1993).

When children’s brains have been altered by the fear response, they are more likely to perceive a threat when none is present and to react with aggression or by running away. Memories of trauma or minimal threats in the environment may trigger fear reactions in which they may misinterpret normal interactions or benign confrontations as severe threats and thus respond with aggression. As a result of impaired attention and executive function, which is responsible for planning and inhibiting behavior, they may respond to perceived threats impulsively and without logical reflection (Perry, 2002b). Thus, children who have sustained traumas tend to act and react in a manner that puts them at odds with authority and with the legal system and sets the stage for delinquency.
Dissociation and Freeze Responses

Faced with threat, infants have the rudimentary “fight or flight” response of crying and body movement. When adults in their environments fail to remove the infants from the threat or are the cause of the threat, dissociation, another neurophysical response, may occur. Through dissociation the child detaches from the external world and attends to internal stimuli, which may include numbing of emotions and sensations, distraction, fantasy, derealization, depersonalization, fainting, or catatonia. Similar to the fight or flight response, the dissociative response is initiated in the brainstem and results in central nervous system activation and release of epinephrine and stress steroids. It differs because heart rate and blood pressure decrease and dopaminergic systems release opioids that activate the reward center of the brain, reduce the perception of pain, and alter the sense of reality, time, and place (Perry, 2001).

When dissociation occurs in response to chronic trauma or for an extended period of time due to severe trauma, neurochemical systems such as dopaminergic systems and the HPA axis may become altered. As a result, affected children may respond to minimal levels of stress by withdrawal, dissociation, or helplessness. They are prone to develop anxiety, depressive, somatoform, or dissociative disorders (Perry, 2001).

Unlike the dissociative response, the freeze response allows persons to remain alert to their environments without fight or flight. The freeze response includes shallow breathing, low blood pressure, slow pulse, pale or clammy skin, and the lack of physical or emotional responsiveness, sometimes referred to as “emotional shutdown” (Perry, 1998). It is adaptive because it results in better localization of sound and visual
observation. This makes it possible to slow down, scan and observe the environment, think more clearly, and decide how to act. In addition, lack of movement permits the child to blend into the environment and to avoid observation by a predator (Perry, Pollard, Blakely, Baker, & Vigilante, 1995).

When, through repeated trauma, the freeze response becomes a primary way of coping with stress, affected children may appear to be oppositional (Perry et al., 1995). This may occur when adults whom they perceive as frightening, such as probation officers or teachers, make requests that arouse stress. Instead of complying, they may shut down and do nothing. As a result, others may perceive them as insubordinate. These children are also at risk of being influenced by negative peers who coerce them to abuse illegal substances or commit crimes because in the process of freezing, they fail to assert themselves or fail to leave the situation.

**PTSD**

Although PTSD may develop subsequent to exposure to trauma, it is not a common response, nor is it part of normal adaptation to traumatic stress. Only 25% of those exposed to trauma go on to develop PTSD (Yehuda, 2002). PTSD symptoms result “from the cascade of biological and psychological responses following the activation of fear and other brain systems” (Yehuda, 2002, p. 126). Persons with PTSD have distinct differences in neurochemical and psychophysiological systems from those who have other psychiatric disorders or other types of stress reactions. They continue to experience the stress response in the absence of a traumatic event and are more sensitive to environmental stress than persons without PTSD (Tucker & Trautman, 2000; Yehuda,
2002). Essentially, they are ever on the alert because their brains initiate the fear response during minor levels of stress and fail to extinguish it after the stress has passed.

**Summary of the Neurobiology of PTSD**

Children who have PTSD and are “stuck” in the fight, flight, freeze, or dissociative mode subsequent to trauma have developed neurobiological patterns that are ill-suited for normal, nontraumatic settings. They become predisposed to delinquent associations and behavior (Perry, 1998). Persistent trauma responses lead children to patterns of escape or aggression such as running away, truancy, defiance, substance abuse, and violence when they feel stressed or they lack coping skills. The primitive fear response supersedes higher cortical functioning. They are prone to misinterpret their own and others’ behaviors and to fail to develop problem-solving skills as well as a hope for the future. Thus, adolescents who have been traumatized may not have the motivation to delay gratification or to avoid negative consequences of behavior. Violence in the home may result in “juvenile vigilantism” in which adolescents adapt by not trusting adults and by taking matters into their own hands instead of reaching out for help (Garbarino, 1999). Fortunately, adults can help children affected by trauma to heal by creating safe environments, establishing predictable routines, and offering them nurturance and support (Perry, 1993).

**The Effect of Trauma on Psychosocial Development.**

Researchers have examined the effect of early trauma on psychosocial development. Streeck-Fischer and van der Kolk (2000) described the effect of chronic trauma throughout child development. Infants and toddlers may experience a broad range of developmental delays in cognitive skills, motor development, language competence,
and socialization. Older children may fail to develop a continuous, predictable sense of self. They are unable to regulate their affect and may respond with aggression toward themselves and others. Trust may not develop and they may not know how to enlist others for help. They may have alterations in their states of consciousness. Unable to describe their own internal states, they may have difficulty recognizing the feelings of others and often lack empathy. Adolescents tend to engage in destructive acting out against themselves and others. They are three times more likely than their nonabused peers to abuse drugs, self-mutilate, and engage in aggressive/violent acts towards others.

Giaconia et al. (1995) studied 384 adolescents (194 males and 190 females) who had been involved in a longitudinal study since 1977 when they were five years old. At the time of data collection, they were 18 years old. They determined that 165 participants had experienced a trauma and 24 of these met the criteria for PTSD during their lifetimes. Persons with PTSD were four times more likely to experience internalizing problems (e.g., anxiety, depression) and 12 times more likely to report externalizing problems (e.g., defiance, conduct problems) according to their ratings on the Youth Self-Report (YSR; Achenbach, 1991) than those without PTSD. They also experienced more interpersonal problems, suicidal ideation, and other lifetime psychiatric disorders such as major depression and substance dependence.

In a naturalistic, summer day camp situation, Shields and Cicchetti (1998) studied the effects of child maltreatment on reactive aggression. Participants consisted of 141 maltreated children (50 girls and 91 boys) and 87 children who had not been maltreated (32 girls and 55 boys). The children, aged 6 to 12, came from impoverished backgrounds. Observers watched the children’s behavior during free play and during semistructured
and structured group activities; they rated their behavior on the Child Behavior Checklist (Achenbach & Edlebrock, 1991) among other measures. Findings demonstrated that the maltreated children were rated as significantly more aggressive (i.e., having committed acts such as defiance of authority, physical or verbal attacks on others, or destruction of property) than those who had not been maltreated.

Dodge, Pettit, Bates, and Valente (1995) examined the effects of abuse over a long-term period. Participants were part of a larger multisite, multicohort study and were recruited when they were in kindergarten in two cohorts (1987 and 1988). Of the 584 total subjects, 48% were female. Developmental histories, including the occurrence of physical abuse, and social information-processing assessments were conducted for all participants at different intervals throughout the course of the study. During the 4th and 5th years of the study, teachers completed the Teacher Rating Form (TRF) of the Child Behavior Checklist (Achenbach & Edlebrock, 1991) to determine the presence of conduct problems. The children who were determined to have histories of physical abuse had more significant problems in social information processing than those who had not experienced this type of abuse. Specifically, they had more encoding errors, hostile attributional biases, aggressive solutions to peer-related problems, and positive evaluations of the outcomes of aggressive behavior. They were more likely to demonstrate externalizing behavior and were four times more likely to develop clinically deviant conduct problems. The implications of this research were that physically abused children: (a) may attend more to hostile cues in a hypervigilant manner than nonhostile cues, (b) may assign hostile intention to others in instances when most people would not, (c) may have a repertoire of aggressive, retaliatory responses that are more quickly
brought to mind than nonaggressive responses, and (d) may believe that aggressive behavior leads to positive outcomes. Thus, physical abuse may be a precursor to the development of conduct disorders and juvenile delinquency.

Children with PTSD are more likely to associate with negative peers. It is not uncommon for persons who have PTSD to develop a negative view of the self, humanity, the environment, and a foreshortened sense of the future. They may see themselves as ineffective, damaged, undesirable, unstable, or worthless. They are at risk to establish relationships with persons who hurt them psychologically or who coerce them into delinquent behavior. To heal, they must not only resolve their PTSD symptoms and develop prosocial behaviors, but also choose companions who support them in positive behavioral choices (Streeck-Fischer & van der Kolk, 2000).

**PTSD in Female Juvenile Delinquents**

Few studies have examined the relationship among trauma, PTSD, and female juvenile delinquency (Wood et al., 2002). More studies have been conducted on delinquent males. Those studies that pertain to females document the fact that incarcerated adolescent females have substantial histories of trauma and PTSD (Wood et al., 2002) and that this population has unique assessment and treatment needs (Miller, Trapani, Fejes-Mendoza, & Eggleston, 1995; Wood et al., 2002). Abram et al. (2004) conducted an epidemiological study of juvenile detainees. From their stratified, random sample of 366 females, they found that 84% had experienced at least one trauma and 14.7% met the diagnostic criteria for PTSD. The mean number of traumas experienced by female detainees was 14.2.
According to Cauffman et al. (1998), 74% of incarcerated females reported that they were either seriously harmed or in danger of being seriously harmed in the past; 60% indicated that they had been raped or in danger of being raped, and 76% witnessed someone being killed or being severely wounded. Overall, they found that more than 75% of convicted female juvenile offenders had been previously exposed to some type of trauma. Of these, 65% met the diagnostic criteria for PTSD at some point in their lives; 12% met the partial criteria for PTSD; and 50% currently had PTSD. This was six times greater than the incidence of PTSD in the general population and 50% higher than the rate of PTSD in male juvenile delinquents.

In a study of urban females, Lipschitz, Rasmusson, Anyan, Cromwell, and Southwick (2000) established the fact that 92% of their sample had been exposed to many traumas, particularly community violence. Those who developed PTSD were more likely to have been arrested. Evans, Albers, Macari, and Mason (1996) examined the entire incarcerated youth population of Nevada and found that 75.4% of females had been physically abused and 71.7% had been sexually abused.

Dixon, Howie, and Starling (2004) compared 100 female juvenile offenders, aged 13-19 years, from a detention center in Sydney Australia with 100 females, matched by age and socioeconomic status, from public high schools. The offenders, 37% of whom had PTSD, differed significantly from the non-offenders, of whom only 4% had PTSD. In addition, the offenders were more likely to have been personally victimized by sexual abuse (50%) or physical abuse (49%) or to have witnessed a violent crime (70%).
In a subsequent study, Dixon, Howie, and Starling (2005) used a semistructured interview to obtain the psychological profiles and trauma histories of 100 female juvenile offenders who were incarcerated in juvenile detention centers in Sydney, Australia. They found that 37% met the criteria for PTSD. Of those who had PTSD, 70% had been sexually abused and had significantly more comorbid mental health diagnoses (mean of 5.4) than those female juvenile offenders who did not have PTSD (mean of 3.1). Moreover, the “majority (73%) of comorbid diagnoses appeared concurrently with or after PTSD onset” (p. 798). They concluded that “treatment interventions that focus on the sequelae of sexual abuse and trauma may be particularly relevant for female juvenile offenders” (p. 805).

Summary of the Existing Knowledge

Trauma during childhood can alter the developing brain so that mildly stressful situations can erroneously trigger an acute stress response. The fight-flight-freeze response initially bypasses the cerebral cortex and prepares humans to act quickly in the face of danger. Thus persons who have been traumatized in childhood may respond to mild or neutral stimuli with a fight response (e.g., aggression), flight response (e.g., running away), or a freeze response (e.g., acquiescing to poor decisions made by negative peers). Moreover, trauma affects children differently at different levels of development. During infancy and very early childhood, gross developmental delays may occur in cognitive, motor, language, and social development. Older children may have difficulty with affect regulation, recognition, and expression. Adolescents are more likely to engage in violent or destructive acts toward themselves and others and to use avoidance behaviors such as substance abuse and running away. The few studies on female juvenile
delinquents, as well as research on males and largely male samples point to high incidences of trauma exposure and PTSD among juvenile delinquents.

Other Potential Mediating Factors

Family dysfunction and mental health conditions such as anxiety and depression have been considered as potential pathways to juvenile delinquency. According to Ford (2002), family conflict and psychopathology, which results in stress for the children, may play a role in the causation of or be a result of traumatic victimization. This may happen in the following ways: (a) children from troubled families may be victimized within the family by physical or sexual abuse or neglect or outside the family; (b) children with pre-existing emotional problems related to family issues are more prone to develop PTSD following trauma; (c) living with family chaos and abuse may increase children’s tolerance for this type of behavior in their interpersonal relationships and can result in further victimization; and (d) children may imitate family violence, which may lead to juvenile delinquency.

Dixon et al. (2004) found that compared to female non-offenders, female offenders had higher levels of family violence such as domestic violence and physical abuse and of parental dysfunction including criminality, substance abuse, and other types of psychopathology. Chamberlain and Moore (2002) studied instability and transitions in parental figures as a mediator of juvenile delinquency among 42 females referred to their treatment foster care program through the juvenile justice system. They defined transitions as “any time a parent figure came in or out of a female’s home or when they were placed in the custody of another adult or in residential care” (p. 92). They found that the females in their sample had an average of 14 parental transitions. Thus, family
instability and dysfunction may mediate both exposure to trauma and juvenile delinquency.

Of the researchers that examined histories of mental health conditions as mediators of juvenile delinquency, Chamberlain and Moore (2002) found in the above study that 63% of girls ($n = 39$), as opposed to 3% of boys ($n = 79$) in their sample, had made suicide attempts and that more female juvenile delinquents than male juvenile delinquents had mental health conditions that met the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV; American Psychiatric Association, 1994) criteria (e.g., somatization disorders, anxiety, depression, and paranoid/psychotic). In a study of 100 females and 100 males who were randomly selected from a Los Angeles County probation camp and two juvenile justice halls, Wood et al. (2002) found that in addition to having higher instances of PTSD (52%), the females also had significantly greater rates of depression and overall psychological distress than boys. Dixon et al. (2004) examined psychopathology, family functioning, and SES. They determined that mental health status (i.e., having psychiatric diagnoses, including PTSD) was the principal factor linked to female offending behavior.

In sum, although some research points to family dysfunction and mental health conditions as possible pathways to juvenile delinquency, research also suggests that trauma and/or PTSD may be an independent and significant pathway to female juvenile delinquency. Moreover, the other most commonly researched pathways to delinquency (family dysfunction and psychopathology) contain exposure to trauma as a subset; physical abuse, sexual abuse, and domestic violence are factors that represent family dysfunction. PTSD is also one of the most commonly occurring mental health conditions
observed in juvenile delinquents. Thus, PTSD is an essential area of treatment for the
majority of female offenders.

Therapies in the Forefront for the Treatment of PTSD

Presently, cognitive-behavioral therapy (CBT) and Eye Movement
Desensitization and Reprocessing (EMDR) have received the greatest empirical support
for the treatment of PTSD. The following section describes different CBT techniques that
have been used for the treatment of PTSD and EMDR for PTSD. Cognitive-behavioral
group therapy for PTSD, which has also received empirical support, is included.

CBT

Theory

CBT incorporates theories and techniques that underlie both cognitive and
behavior therapy. Cognitive theorists maintain that the development of PTSD is related to
individual core beliefs about the self, the world, and the future, prior to the occurrence of
traumatic events and alterations in these beliefs after the events. Cognitive therapists
teach clients to recognize and to evaluate irrational interpretations (automatic thoughts
and beliefs) of traumatic events, which underlie negative emotions by challenging their
validity and by modifying them with more accurate beliefs and self-talk. Therapists pay
particular attention to trauma survivors’ views of safety, trust, and self (Rothbaum,
Meadows, Resick, & Foy, 2000). Therapists encourage clients to give examples of recent
emotional situations and teach them to determine their associated thoughts. Dysfunctional
thoughts are challenged and clients are taught to replace these with more rational and
generally less negative thoughts. Eventually, clients learn to identify, challenge, and
replace dysfunctional thoughts and beliefs on their own (Moore, Zoellner, & Bittinger,
2004). For example, a client who thinks, "I am damaged because I was raped and no man will ever want me" can learn to challenge the veracity of this thought and replace it with, "The man who raped me was wrong, but I am just as desirable as I was before the rape."

Behavior therapy, which is based on learning theory, explains ways in which behavior is learned and can, therefore, be unlearned or changed. Anxiety from PTSD can be deconditioned through exposure to feared situations that are, in reality, harmless and through the mastery of relaxation techniques. For example, as a client talks about her traumatic experience and practices relaxation techniques, she becomes less anxious. Generally, various cognitive and behavioral techniques are combined to address complex problems like PTSD.

Contemporary learning theory, emotional processing theory, and social-cognitive theories underlie many CBT treatments for PTSD (Rothbaum et al., 2000). Contemporary learning theory uses principles of classical and operant conditioning to decondition anxiety and to correct problematic behaviors that persons develop to reduce or escape the distressing symptoms associated with traumatic experiences. Exposure techniques (described below) are utilized for classically conditioned symptoms such as the re-experiencing of traumatic events and physiological arousal; contingency management is employed for symptoms acquired through operant conditioning such as behavioral problems and avoidance of feared situations. For example, a young woman, who was present during a bank a robbery in which several persons were killed, may stop going to banks because the mere thought about being inside of a bank triggers severe anxiety. Through exposure, the woman would learn to reduce her feelings of anxiety by forcing herself to go to a bank and by remaining there until her anxiety dissipates. With
contingency management, she may reward herself for approaching a bank by treating herself to a new book.

Emotional processing theory proposes the idea that PTSD develops as a result of the formation of a pathological fear structure in response to a traumatic event (Rothbaum et al., 2000). This fear structure, which is extremely distressing, may be automatically activated by anything (thoughts, feelings, sensations, images, etc) even remotely associated with the traumatic event. As a result, avoidance behaviors may emerge in which persons avoid stimuli that activate the fear structure and thus impose drastic restrictions upon their lives. The treatment goal is to correct the fear structure’s pathological elements, first activating the fear structure through exposure techniques and then introducing new information that is incompatible with the dysfunctional elements, thereby correcting the emotional processing (Rothbaum et al., 2000). For example, a teenager who nearly died in a house fire does not go to homes of friends or family members unless they promise her that they will not light decorative candles; nor will she frequent restaurants that use candles for ambiance. Through exposure therapy she recounts the vivid details of the fire within the safety of the therapist’s office until her fear extinguishes. She becomes able to remain in the therapist’s office with safely lit candles and eventually is able to transfer this learning to other settings.

Social-cognitive theories address the impact of trauma on individuals’ belief systems and on their adjustment in an attempt to reconcile the trauma with the belief systems prior to the traumatic event (Rothbaum et al., 2000). To accomplish this, feelings such as fear, anger, sadness, shame, and guilt, must first be accessed. Then maladaptive thoughts and beliefs supporting the feelings can be changed, with the result of decreasing
or eliminating the distressing emotions. After being raped by a boy in her church youth group, a female who once believed that all Christians were good, now distrusts all the males in her church because she believes that they use religion to get what they want from females. By identifying her distrust and the faulty cognitions underlying it, she can learn how to discern Christian boys who are trustworthy.

Interventions

CBT for PTSD consists of a number of varied techniques, including psychoeducation, systematic desensitization, exposure, stress inoculation, cognitive therapy, and combination therapies (Friedman, 1996; Rothbaum et al., 2000). The following is a summary of these interventions.

Psychoeducation. Moore et al. (2004) recommend that CBT include education about the trauma response and symptoms related to trauma during initial treatment sessions. They suggested that this be done in a didactic manner and include typical reactions to trauma, the side-effects of talking about trauma, the definition of PTSD, the function of anxiety and fear, other related symptoms such as depression and feelings of guilt and shame, and the effects of cognitive distortions. In this way clients can gain an understanding of PTSD, so that they are less likely to feel weak or inadequate when they experience common symptoms.

Systematic Desensitization. Developed by Wolpe (1958), systematic desensitization is based on reciprocal inhibition, the theory that certain responses (e.g., relaxation) block incompatible responses (e.g., anxiety). It simultaneously combines exposure (see below) with relaxation. Initially, therapists teach relaxation skills and guide clients to develop an anxiety hierarchy, in which fears related to trauma are ranked from
the least anxiety provoking to the most severe. Desensitization begins with clients imagining the lowest anxiety-evoking stimulus while maintaining a state of relaxation. As this is accomplished, clients, assisted by the therapist, proceed systematically through the hierarchy until they can master all the stimuli on the hierarchy without anxiety.

_Exposure Therapy._ Exposure therapies involve confronting clients with previously avoided and feared stimuli (Rothbaum & Foa, 1992) so that unwanted emotions or behaviors associated with the stimuli are elicited (Marshall, 1985) and ultimately extinguished as the feared consequences do not occur. The techniques, which vary, are classified by the type of exposure (e.g., imaginal or in vivo), the duration (e.g., short or long), and the level of arousal (e.g., low or high; Meadows & Foa, 1999). The stimuli utilized may be internal (e.g., traumatic images or distressing thoughts) or situational (e.g., persons, places, animals, or things associated with the trauma; Bouchard, Mendlowitz, Coles, & Franklin, 2004). Unlike systematic desensitization, clients are exposed to anxiety-provoking stimuli without relaxation. Exposure continues until the anxiety dissipates. Typically, a hierarchy of anxiety-provoking stimuli is developed and, depending on the type of exposure, clients are exposed either to the most anxiety-provoking stimulus (flooding) or to a stimulus in the moderate range. The goal of exposure is to prevent clients from engaging in former avoidance behavior which had been negatively reinforced. During imaginal exposure, clients are prompted by the therapist to recount the traumatic event, including discomforting details, until the anxiety reduces (Rothbaum et al., 2000). Prior to using exposure techniques, the therapist must develop a secure, trusting therapeutic relationship with clients (Ehlers & Clark, 2000).
Prolonged exposure is a form of exposure therapy that uses both imaginal and *in vivo* exposure (Cahill & Foa, 2004). Research has demonstrated that prolonged exposure is extremely effective in reducing symptoms of PTSD and that it stands on its own in doing so. Adding other forms of CBT such as relaxation training or cognitive restructuring does not augment treatment effects, as long as both imaginal and *in vivo* exposure are used (Cahill & Foa, 2004).

**Stress Inoculation Training.** Using stress inoculation, therapists educate clients about PTSD and about the effects of trauma; they also teach breathing techniques and other forms of relaxation. Then through thought-stopping, role-playing, covert modeling, and guided self-dialogue, clients learn and practice new skills to cope with anxiety. Thus “inoculated,” they are able to confront anxiety-provoking situations that they may have avoided in the past (Rothbaum et al., 2000).

**Cognitive Therapy.** Cognitive therapists teach clients to recognize and examine irrational interpretations (automatic thoughts and beliefs) of traumatic events which underlie negative emotions, in order to challenge their validity, and to modify them through the development of more accurate beliefs and self-talk. Because cognitive distortions related to traumatic events tend to increase PTSD symptoms in trauma survivors (Owens & Chard, 2001), therapists address survivors’ interpretations of the traumatic events, particularly their views of safety, of trust, and of the self (Rothbaum et al., 2000). They encourage clients to give examples of recent emotional situations and teach them to determine their associated thoughts. Dysfunctional thoughts are challenged and clients are taught to replace them with more rational and generally less negative
thoughts. Eventually clients learn to identify, challenge, and replace dysfunctional thoughts and beliefs on their own and outside of treatment (Moore et al., 2004).

**Combination Treatments.** CBT techniques typically are not used alone, but in various combinations. For example, exposure is generally combined with psychoeducation and relaxation training (Rothbaum et al., 2000). However, the research is mixed on whether or not adding treatments (e.g., adding cognitive restructuring to prolonged exposure or prolonged exposure to cognitive therapy) is beneficial.

In a review of the literature on combination therapies, Cahill and Foa (2004) determined that prolonged exposure, which uses both in vivo and imaginal exposure, is more effective than either component alone and that adding other forms of therapy to prolonged exposure does not enhance therapy. They found that the only way to improve treatment is to add prolonged exposure to treatments that do not use prolonged exposure. Apart from this difference, they stated that, thus far, "direct comparisons between different forms of CBT have not yielded any particular pattern of superiority for one treatment over another" (p. 277); nor have combined treatments been found to be superior to specific forms of CBT such as prolonged exposure, cognitive restructuring, or EMDR. Cahill and Foa (2004) hypothesized that the different types of treatments that are effective for treating PTSD may "operate through the same mechanisms and that each one provides a full dose of the effective component and therefore combining them does not result in further benefit" (p. 298).

Cognitive processing therapy combines exposure with cognitive therapy (Resick & Schnicke, 1993). Through cognitive therapy, clients learn to challenge dysfunctional thoughts and beliefs pertaining to the self and the world. Exposure consists of clients
writing detailed accounts of traumatic events and reading them on separate occasions to their therapists and to trusted persons in their environment. Therapists elicit feelings as well as areas of conflict and help clients to develop more accurate and realistic beliefs. During this process, therapists must be sensitive to any distress or exhaustion that clients may experience (Ehlers & Clark, 2000).

Anxiety management training (AMT) combines relaxation training, stress inoculation, cognitive restructuring, breathing retraining, deep muscle relaxation, biofeedback, social skills training, and distraction techniques (Friedman, 1996; Rothbaum & Foa, 1992). Relaxation methods such as deep breathing, progressive relaxation, and biofeedback help to combat anxiety and hyperarousal in persons with PTSD. After mastering relaxation techniques in therapy, clients are typically instructed to practice these daily (Rothbaum & Foa, 1992). Unlike exposure techniques, which activate fear to decondition it, AMT supplies skills to control fear and thus reduce anxiety. In particular, deep relaxation techniques affect the autonomic nervous system so that heart rate and blood pressure decrease.

Trauma-Focused Cognitive-Behavioral Therapy for Sexually Abused Children (TF-CBT; Cohen, Mannarino, & Deblinger, 2001) was developed for the individual treatment of children who have been sexually abused, including those who also sustained multiple or other forms of trauma. The principal components of this 12-session treatment include psychoeducation, affect modulation, stress-management, information about the cognitive triad (A. T. Beck, Rush, Shaw, & Emery, 1979), the creation of trauma narratives (gradual exposure), cognitive processing, safety skills, and sexuality education. In addition, a parent component teaches parents the skills similar to those which are
taught to their children; they are also taught parenting skills. Studies, thus far, have examined TF-CBT for the treatment of children, ages 3 to 15 (Cohen, Deblinger, & Mannarino, 2004; Cohen & Mannarino, 1997; Deblinger, Steer, & Lippman, 1999). These studies found that TF-CBT was more effective than nondirective supportive therapy in improving symptoms of various conditions such as PTSD, depression, anxiety, sexual problems, and dissociation in PTSD. Results were sustained at six- and 12-month follow-ups (Cohen & Mannarino, 1997, 1998; Cohen, Mannarino, & Knudsen, 2005), as well as two years later (Deblinger et al., 1999).

Support for CBT

Trauma experts agree that cognitive-behavioral therapy (CBT) is the treatment of choice of choice for PTSD both in children and in adults (Cohen, 1998; Perrin, Smith, & Yule, 2000). As noted above, CBT for PTSD generally combines selections from the following techniques: psychoeducation, exposure, systematic desensitization, stress inoculation, cognitive restructuring, assertiveness training, coping skill development, biofeedback, relaxation training, and relapse prevention (Friedman, 1996; Perrin et al., 2000; Rothbaum et al., 2000). Foa, Davidson, Frances, and Ross (1999) surveyed 55 PTSD experts who were selected on the basis of recent publications, reception of research grants, and membership in the International Society for Traumatic Stress studies of the American Association of Behavioral Therapists. They found that exposure therapy, cognitive therapy, anxiety management, and psychoeducation were the most effective forms of treatment for PTSD symptoms. More recently, Jaycox, Zoellner, and Foa (2002) further delineated breathing retraining, education about PTSD, exposure (in vivo and imaginal), and cognitive restructuring as essential components in the treatment of rape
survivors. Further, Pine and Cohen's (2002) review of randomized controlled psychotherapy trials found that CBT was effective for children with psychiatric symptoms following sexual abuse.

Overall, exposure therapy has been studied the most widely and has received the greatest empirical support (Meadows & Foa, 1999; Rothbaum et al., 2000). It has replaced systematic desensitization as the treatment of choice for PTSD for those persons who can tolerate it (Meadows & Foa, 1999; Rothbaum et al., 2000). In addition, many studies of exposure have been methodologically rigorous, applying it to a wide range of trauma populations (Rothbaum et al., 2000). Exposure therapy also has limitations. Some trauma survivors are unwilling to confront trauma and their symptoms may increase with exposure. Also, persons whose overwhelming response is anger, as opposed to anxiety, may not benefit from exposure. Evidence also supports stress inoculation training, cognitive therapy, combination approaches, cognitive processing therapy (Rothbaum et al., 2000), assertiveness training, relaxation training, and biofeedback for the treatment of PTSD (Davidson & Parker, 2001).

In a review of the literature, Cahill and Foa (2004) found CBT to be generally effective for the treatment of different types of traumas, including childhood physical and sexual abuse, rape, motor vehicle accidents, terrorism, and combat. They found CBT to be successful for a variety of trauma populations, including males, females, adults, and children. They determined that CBT not only decreases PTSD symptoms, but also reduces symptoms of comorbid problems such as general anxiety, depression and trauma-related guilt, shame, decreased self-esteem, and dysfunctional cognitions. They also
noted that relapse following CBT is lower than that following the discontinuation of medication.

**EMDR**

In 1987 Shapiro (1995) observed that her negative thoughts dissipated as she moved her eyes rapidly from side to side (saccadic eye movements). This insight led to the development EMDR, a desensitization procedure in which clients recall distressing thoughts, feelings, and images while they visually track therapists’ hands; therapists wave their hands horizontally in front of clients’ eyes at a distance and rate that is tailored to the comfort of individual clients (Chemtob, Tolin, van der Kolk, & Pitman, 2000).

Shapiro’s (1989) first outcome study of EMDR performed on victims of rape and sexual molestation as well as Vietnam veterans demonstrated surprising results. Members of the treatment group showed significantly greater improvement than the control group in terms of decreased anxiety and positive cognitions after just one session that lasted 15 to 90 minutes. Although the relationship between the saccadic eye and the reduction of PTSD-related distress was not determined, several theories, described below, were proposed.

**Theory**

Shapiro (2000) proposed that traumas or negative life experiences alter the brain’s biochemical balance of the information processing system. As a result, traumatic events are not adequately processed or resolved. Instead perceptions, beliefs, and feelings are “locked” in the nervous system. Through EMDR methodology, a form of accelerated information processing, the information processing system may become “unblocked.” EMDR proponents hypothesized that (a) healing may occur through the same mechanism
as REM sleep; (b) eye movements may improve the hemispheric communication of the brain; and/or (c) “EMDR may initiate an orienting reflex change in neurophysiological functioning leading directly to desensitization” (Shapiro, 2000, p. 4).

Support for EMDR

Despite skepticism and criticism, a substantial body of experimental research has demonstrated the effectiveness of EMDR (Boudewyns, Stwertka, Hyer, Albrecht, & Sperr, 1993; Edmond, Rubin, & Wamback, 1999; Montgomery & Ayllon, 1994; Rothbaum, 1997; Shapiro, 1989; Wilson, Becker, & Tinker, 1995). Generally speaking, EMDR has been shown to decrease trauma-specific emotional disturbance, measured by subjective units of disturbance (SUD); increase positive self-referencing beliefs, as indicated by an increase in Shapiro’s (1995) validity of cognitions scale (VoC; Boudewyns et al., 1993; Edmond et al., 1999; Shapiro, 1989); and reduce PTSD symptoms (Wilson et al., 1995), depression (Montgomery & Ayllon, 1994; Rothbaum, 1997), anxiety, disturbing dreams, intrusive thoughts, and irrational thoughts about trauma (Montgomery & Ayllon, 1994). In their meta-analysis of 34 EMDR research studies for the treatment of PTSD, Davidson and Parker (2001) concluded that clients fare better with EMDR than with no treatment at all.

Criticism of EMDR

Since its inception, strong criticism has been raised against EMDR. The most compelling arguments to date come from Davidson’s and Parker’s (2001) meta-analysis of EMDR. Although they did find that EMDR is better than no treatment at all, they also established that the eye movements, central to the procedure, are not necessary; that EMDR is no better than other exposure-based treatment, and that EMDR is not briefer
than CBT. Critics believe that Shapiro essentially took CBT and added eye movements. Although many studies have shown that EMDR decreases SUD ratings and increases VoC scores, critics contend that these scales, which are discussed with clients throughout the EMDR session, measure process, as opposed to outcome, particularly because few EMDR studies have demonstrated improvement in standardized assessment measures (Acierno, Hersen, Van Hasselt, Tremont, & Mueser, 1994; Davidson & Parker, 2001).

**EMDR Compared with CBT**

Apart from Devilly and Spence (1999), who found that CBT is better than EMDR in reducing PTSD psychopathology, EMDR has not been tested against conventional therapies (Beutler & Harwood, 2001). Nevertheless, it remains one of the most effective forms of therapy for PTSD, as are exposure therapy, stress inoculation training, and cognitive therapy (Cahill & Foa, 2004). In a meta-analysis of 61 treatment outcome studies for PTSD, Van Etten and Taylor (1998) included drug therapies, behavior therapies, EMDR, relaxation training, hypnotherapy, and dynamic therapy. They found that behavior therapy (exposure therapy) and EMDR were the most effective. Both therapies had low dropout rates and large effect sizes compared to control conditions.

**Group Therapy**

**Group Therapy for Adult PTSD**

In a review of 14 studies that compared different forms of group therapy (supportive, cognitive-behavioral and psychodynamic), Foy et al. (2000) determined that “group therapy, regardless of the nature of the therapy, is associated with favorable outcomes in a range of symptom domains” (e.g., PTSD, depression, anxiety, self-esteem, and fear; p. 168). Cognitive-behavioral group therapy for PTSD includes the application
of exposure and cognitive restructuring to each member’s traumatic experience(s), the teaching of coping skills, relapse prevention, and resources for gaining control over specific symptoms of PTSD. As individual members recount and process their personal experiences, other members simultaneously bear witness, give support, challenge cognitive distortions, and personally benefit by vicarious exposure to their peers’ experiences (Foy et al., 2000). In their review of six studies examining cognitive-behavioral group therapy for PTSD, Foy et al. (2000) found that every study demonstrated improvement in PTSD symptoms, with effect sizes ranging from 0.33 to 1.09. They noted several methodological limitations of most group therapy research, including lack of random assignment to treatment conditions, the absence of a comparison or control group, and problems with construct validity (e.g., why and how group therapy works). In addition, although most studies used constructs of psychopathology (e.g., PTSD, depression, anxiety, etc.), none used behavioral measures as dependent variables.

**Group Therapy for Childhood PTSD**

Cognitive-behavioral group therapies for PTSD are primarily focused on trauma and its symptoms. According to the *Practice Guidelines for the Treatment of Patients with Acute Stress Disorder and Posttraumatic Stress Disorder* (Anonymous, 2004), much of the emphasis is on “specific traumatic experiences and memories” (p. 37). Although there is a paucity of research in this area both for adults and for children, the majority of effective outcomes come from studies of children and adolescents (Anonymous, 2004). Studies which pertain to children and adolescents are described below.
March, Amaya-Jackson, Murray, & Schulte (1998) examined the efficacy of a group-administered, cognitive-behavioral therapy protocol for children (male and female), aged 10-15, who developed PTSD following a single traumatic experience. Their 18-session, Multi-Modality Trauma Treatment (MMTT) protocol was based on the two-factor conditioning theory which suggests that initially, fear is classically conditioned at the time of the trauma because fear is associated with environmental and internal stimuli associated with the original trauma. Subsequently, fear is maintained by operant conditioning. When children avoid situations or thoughts that remind them of past traumas, their avoidant behaviors are reinforced by feelings of relief and the fear of these thoughts and situations remains. Thus, to extinguish fear, individuals must be exposed to reminders of trauma without experiencing the feared consequences. MMTT consisted of anxiety management training, anger management training, cognitive training, narrative exposure, worst-moment exposure, confrontation of dysfunctional beliefs or schemas, and relapse prevention. It included an individual pull-out session to prepare each person for the exposure portion of the group.

To evaluate MMTT, March et al. (1998) used a single case multiple baseline across setting and time design. Fourteen of seventeen participants completed the program and demonstrated significantly reduced symptoms of PTSD, depression, anxiety, and anger. None of the participants experienced adverse effects, although some did experience short-term distress in the midst of treatment.

The MMTT protocol was revised subsequent to the above study. It was shortened by four weeks by combining the anxiety management training, cognitive restructuring, and anger coping segments (Amaya-Jackson et al., 2003). A grief component was also
added. The exposure portion was introduced earlier in the program and the program was revised to be more developmentally appropriate for elementary and middle school children. In the second year of the study, the program was implemented in elementary schools and high schools. During the third year it was introduced in an outpatient mental health clinic for children and adolescents who had been exposed to traumas such as community and family violence. Unlike the first year of the study, children who had disruptive behavior disorders were included. Of the seven participants, four (one child and three adolescents) received the treatment in an individual format and three children participated in the group format. All of the children had clear reductions in PTSD symptoms in the treatment phase when compared to their symptoms in the baseline phase.

In their study of 43 sexually abused females, who were between the ages of 12 and 18 and lived in a group home setting, Sinclair and Larzelere (1995) found that their 20-week, closed-enrollment, cognitive-behavioral group therapy program decreased internalizing and externalizing problems as well as PTSD, and increased their self-worth. Group treatment consisted of three phases. The first or familiarization phase emphasized rules for participation and included information about human sexuality and the effects of victimization. The working phase included members’ disclosures of traumatic memories and associated thoughts, feelings, and behaviors. In the termination phase members reviewed their progress and formed goals for future growth. Limitations of the study included the fact that no control group was used and there were no checks to ensure that the cotherapists accurately adhered to the treatment protocol.
Saltzman et al. (2001) examined the effectiveness of a school-based, manualized, 20 session group therapy program for adolescent boys (61%) and girls (39%). The participants who had experienced a recent trauma were between the ages of 11 and 14. Participants were divided into groups of 5 to 7 members each. Twenty-six adolescents completed the groups. Results showed significant improvement in symptoms of posttraumatic stress and complicated grief. The limitations included the fact that it was a small, nonrepresentative sample; there was a lack of random assignment and lack of a control group; and they utilized a limited assessment battery.

In a pilot study of adolescent witnesses of homicide, Sallhoum, Avery and McClain (2001) found that group therapy consisting of psychoeducation about trauma, feelings identification, development of coping skills, and anger management, significantly reduced PTSD symptoms in 45 inner city adolescents (60% female). In a controlled, nonrandomly assigned, study Goenjian et al. (1997) found that brief trauma/grief-focused group therapy significantly decreased PTSD symptoms in 64 adolescents (22 male and 42 female) exposed to the 1988 earthquake in Armenia. Treatment benefits were maintained 1½ years and 3 years later.

More research is necessary to evaluate the effectiveness of cognitive-behavioral group therapy for the treatment of PTSD in female juvenile delinquents. Nevertheless, evidence for the effectiveness of CBT for the treatment of adults with PTSD and the initial support for group therapy, including cognitive-behavioral group therapy for children with PTSD, indicate that cognitive-behavioral group therapy is a promising method of treatment.
Rationale for the Selection of Techniques Used in the ARC PTSD Group Therapy Manual

*Ethical Considerations*

Evidence suggests that residential and group treatments for juvenile offenders have sometimes produced iatrogenic effects in which "programs did not fulfill their anticipated objectives and instead unintentionally promoted the very behaviors they were attempting to decrease" (Ruhle, 2005; p. 625). Ruhle (2005) recommended that the following considerations be made when developing group treatments for delinquents: (a) the possibility of iatrogenic effects, particularly those reported in prior research, should be recognized in advance; (b) the program should utilize evidence-based treatment; (c) empirically demonstrated risk factors should be addressed; (d) group leaders should beware of supporting deviant peer processes within the group; (e) the program should contain a high degree of structure with "clear specification of intervention protocols, targets, and desired outcomes" (p. 622) such as CBT programs; (f) program staff should receive ongoing training, consultation, and supervision; (g) outcomes of interventions should be monitored relative to a control group; and (h) participant feedback should be solicited. The developers of ARC PTSD Groups have endeavored to anticipate and prevent iatrogenic effects through literature reviews, use of evidence-based treatment, consideration of risk factors (see vicarious traumatization discussed below), instruction of cofacilitators to detect and to immediately interrupt harmful peer processes, utilization of a CBT-based treatment manual, training and supervision requirements for cofacilitators, and the current outcomes evaluation.
Juvenile delinquents in residential placements often have longstanding histories of trauma, untreated PTSD, and complex psychiatric profiles. In developing intervention strategies for the ARC PTSD Group Therapy Manual, Lazarus' (1989) multimodal assessment was chosen as a treatment planning aid because of its comprehensiveness. Lazarus' basic modalities for assessment and intervention include Behavior, Affect, Sensations/Health, Imagery, Cognitions, Interpersonal, and Drugs/Medical. To determine contents and goals of each group session, a chart was made by listing each of Lazarus' basic modalities and the symptoms for each category that female juvenile delinquents with PTSD tend to experience (see Appendix A). Interventions that were selected were based on the literature review and the resources available in most Pennsylvania group homes for female juvenile delinquents. As such, selected interventions included cognitive restructuring, anxiety management training, psychoeducation, desensitization through discussion of traumas with others, coping skills training, information on the recognition of harmful relationships and the development positive, healthy relationships, and alteration of dysfunctional beliefs about the self, the world, and the future.

Although prolonged exposure was not used for reasons described below, it was necessary to include brief exposure to traumatic material so that individuals could examine their beliefs and behaviors related to traumatic events. Thus members were required to discuss, write, and draw about details of their traumas, both in the group and as homework (J. G. Beck & Coffey, 2005). This also guarded against reinforcing avoidance as a coping behavior.
The group therapy modality was selected because it could offer services to the greatest number of females (Anonymous, 2004) and reduce the strain on therapists who would have the assistance and support of a cotherapist (J. G. Beck & Coffey, 2005).

According to Yalom (1995), groups also provide healing factors such as the installation of hope, the awareness of the universality of problems and symptoms, the imparting of information, the development of altruism, the corrective recapitulation of the primary family group, the development of socializing techniques, and the imitation of coping behaviors. According to Herman (1997),

The solidarity of a group provides the strongest protection against terror and despair, and the strongest antidote to traumatic experience. Trauma isolates; the group re-creates a sense of belonging. Trauma shames and stigmatizes; the group bears witness and affirms. Trauma degrades the victim; the group exalts her. Trauma dehumanizes the victim; the group restores her humanity (p. 215).

Finally, when selecting the group therapy modality, the possibility of vicarious traumatization of group members who hear the traumatic accounts of their peers was carefully considered and evaluated. Thus far, only a few studies of adult group therapies for trauma have addressed this issue and have not found it to be detrimental even when prolonged exposure (Falsetti, Resnick, Davis, & Gallagher, 2001) and flooding (Woodward & Drescher, 1997) were used in sessions. Nevertheless, as a further precaution, the ARC PTSD Group Facilitators Certification Program addressed this issue thoroughly through education and role play.
Because there is considerable support for exposure therapy and for EMDR, why were these forms of therapy not used in the ARC PTSD Group Therapy Manual? Therapists’ skill level is a primary determinant in the selection among treatment methods for PTSD (Moore et al., 2004; Taylor, 2004). The ARC PTSD Group Therapy Manual was designed for use by uncertified and paraprofessional staff. Research shows that few professional therapists (29%) have been trained in exposure therapy and slightly less than half of those therapists actually use it to treat PTSD (Cahill & Foa, 2004). Thus if experienced therapists are reluctant to make use of prolonged exposure, it would be even more difficult to train and expect paraprofessional staff to use this type of therapy. Moreover there would be few supervisors in the various agencies trained to supervise prolonged exposure. Second, many clients fear exposure-type therapies and their symptoms tend to increase prior to the completion of therapy (Cahill & Foa, 2004). Paraprofessional staff persons do not have the training or experience to cope with traumatic reactions that may be caused by prolonged exposure and may stop the exposure prematurely. This could inadvertently reinforce avoidance behaviors and increase fear symptoms. Third, there are no well-validated exposure treatments for childhood abuse, which many juvenile delinquents with PTSD have suffered, because the psychological sequelae are typically more complex than they are for other forms of trauma. Victims of childhood abuse are also more likely to have poorer outcomes with exposure therapy because of difficulty managing anger, anxiety, and distress (Cloitre, Koenen, Cohen, & Han, 2002). Fourth, although there is substantial research on prolonged exposure with adults and children, there are no studies to date that evaluate this type of treatment in
juvenile delinquents who, in addition to having PTSD, tend to be oppositional, easily angered, emotionally volatile, and violent. Moreover, preliminary evidence suggests that exposure therapy is not effective for persons who have primary responses of anger (as opposed to anxiety) and who are perpetrators of violence (Rothbaum et al., 2000). Fifth, because CBT is equal in its effectiveness as is prolonged exposure, and because many of the agencies who treat juvenile delinquents are versed in this type of treatment, it appeared to be the more prudent choice.

EMDR was not used because EMDR therapists must be licensed as healthcare professionals by their states and then certified through the EMDR Institute. As noted above, few therapists in Pennsylvania residential treatment agencies are licensed. Moreover, the training through the EMDR Institute is not affordable for most of these agencies. Second, EMDR is an individual therapy and not appropriate for a group format. Finally, dismantling studies have determined that it is not clear whether or not eye movements are a necessary component of the treatment. This suggests that EMDR may simply be another form of CBT.

The ARC PTSD Group Therapy Program

*The ARC PTSD Group Therapy Manual*

Manual-based treatment protocols are important because they ensure that treatment can be replicated and empirically evaluated. Furthermore, they increase the likelihood that uniform treatment can be conducted by different therapists at diverse treatment sites. Although PTSD in children often has a chronic and debilitating course, few manualized treatment protocols address this condition (Amaya-Jackson et al., 2003). The ARC PTSD Group Therapy Manual is one of the first of its kind to treat PTSD in
female juvenile delinquents who are court-ordered into residential treatment programs. The treatment manual contains all the information necessary for trained facilitators to implement treatment groups in a consistent manner. The introduction to the manual explains the history and scope of the program, the researched-based treatment approaches utilized, the selection and training of group leaders, group logistics, the management of traumatic reactions, the establishment of safety, the consideration of cultural factors, risk management procedures, and self-care. In the next section the manual describes each group lesson in terms of treatment goals, lists of necessary materials, the specific format of the group, scripts for mini-lectures, handouts for group members, and notes to guide leaders in the handling of potential problems or difficulties that may arise in the group.

Goals

The ARC PTSD Group Therapy Program has the following goals for participants:
(a) giving and receiving support from others who have PTSD, (b) experiencing a nurturing, stable, and safe environment, (c) establishing secure relationships within the group, (d) learning information about PTSD, (e) relating trauma experiences to caring peers, (f) identifying and expressing feelings related to trauma, (g) modifying dysfunctional thoughts and beliefs pertaining to trauma, (h) recognizing and understanding symptoms of PTSD, (i) understanding the effects of trauma on current behavior, (j) learning new ways to cope with symptoms, (k) assuming responsibility for behavior, (l) reducing anxiety associated with traumatic memories, (m) learning to develop positive, nonabusive relationships, (n) putting traumatic experiences into perspective, and (o) preventing future problems.
**Logistics**

ARC PTSD Groups were designed to provide safety and comfort in order to promote healing. Because clients require time to discuss their traumas, to process educational material, to participate in exercises, to practice coping behaviors, and to receive assistance from their peers and from the group facilitators, the optimal number of members is 4-6. However, the numbers of members in each group may range from 3-10. Depending on the agency, groups may be conducted weekly or semiweekly. The duration of each group is 90 minutes. Prior to attending the first group, members must meet with the group leaders to sign a pregroup contract (see Appendix B). In this agreement new members list three ways in which they will contribute to the group (e.g., listening to others, supporting others, or gently confronting others) and three goals on which they will work in the group. Their signatures on the contract indicate that they will follow the group rules, will work on individual and group goals, and will help other members to attain their goals. Group leaders also sign the agreement to verify that they will teach members coping skills for symptoms of trauma, will help them to achieve their goals, and will maintain and enforce safety within the group.

**Content**

The treatment group program consists of 15 interactive sessions that are entitled (a) Introduction and Relaxation Training, (b) Safety, (c) Introduction to Trauma and PTSD, (d) Feelings Identification, (e) Managing Self-Defeating Thoughts, (f) Disclosure of Traumatic Events, (g) Personal Symptoms of PTSD, (h) Dissociation and Depersonalization, (i) Intrusive Experiences, (j) Self-Awareness, (k) Health and Physical Sensations, (l) Interpersonal Relationships, Part I, (m) Interpersonal Relationships, Part
II, (n) Loss, and (o) Ceremony and Celebration. These sessions are described in more detail in Appendix C.

Sometimes clients' symptoms increase during the beginning and disclosure sessions (Cahill & Foa, 2004) and there is a need to deviate from the treatment protocol to reduce distress. When this occurs, the ARC PTSD Group Therapy Manual allows a planned departure from the session outline to incorporate a Problem-Solving Mutual Support Group, adapted from Yalom (1983) and the Equip Program developed by Gibbs, Potter, and Goldstein (1995) to address individual and group needs and to teach coping skills. Problem-Solving Mutual Support Groups are used sparingly and may extend the program to 16-18 sessions.

The general format of all group lessons is the same. Each group begins with an introduction to the session and the setting of an agenda, followed by the sharing of homework assignments, psychoeducation, and group exercises. It ends with relaxation exercises and group members summarizing the information that they learned in the group. Each group member has a journal in which to record thoughts and feelings related to trauma and a three-ring binder for saving informational handouts and written homework assignments.

In addition to the Problem-Solving Mutual Support Group, the ARC PTSD Group Therapy Manual includes two other supplemental exercises to address irregular occurrences. Residential treatment programs must occasionally discharge clients prior to their completing all of the group lessons. When this occurs, a premature discharge exercise developed by Herman (1997) is used to provide closure for the client who is discharged and for the remaining group members. Further, a treatment session must
sometimes end while members are still highly aroused or agitated. In this instance a
closure exercise, developed by E. Gil (personal communication, May 25, 2001) is added
at the end of the session to help members contain their emotions prior to leaving the
group.

Requirements for Participating Agencies and Group Facilitators

To offer ARC PTSD Groups, agencies must ensure that their group facilitators are
supervised by mental health professionals who have graduate degrees in psychiatry,
psychology, social work, or counseling, and are versed in the assessment and treatment of
PTSD, in adolescent development and treatment, in cognitive-behavior therapy, and in
group therapy. They must also commit to using two cofacilitators, at least one of whom is
female, for every group that they plan to run and to sending these persons to the five-day
ARC PTSD Group Facilitator Certification Program.

Because the PTSD group is designed to be led by paraprofessionals and by
certified or uncertified professional coleaders, only those who meet the qualifications
listed below and who have successfully completed two training programs developed by
ARC are eligible to conduct treatment groups. The educational background of group
leaders ranges typically from having high school diplomas or General Education Degrees
to Master’s degrees in psychology, social work, counseling, or education. Those who do
not have Master’s degrees in a mental health field are required to have a minimum of two
years of experience in working with adolescents and in conducting adolescent group
therapy.
Group leaders must complete two training programs developed by ARC, the ARC Basic PTSD Training Program and the ARC PTSD Group Facilitator Certification Program. The ARC Basic PTSD Training Program provides basic information about the assessment and treatment of PTSD to probation officers and staff from female detention centers and residential programs for female juvenile delinquents. The ARC PTSD Group Facilitator Certification Program is designed for persons who meet the requirements necessary to become facilitators of ARC PTSD Groups.

The ARC PTSD Group Facilitator Certification Program is 40 hours in duration and includes (a) a review of information from the ARC Basic PTSD Training Program, (b) detailed training in conducting adolescent group therapy, (c) discussion of the goals and methods of ARC PTSD Groups, (d) principles of ethics and risk management, (e) CBT techniques, (f) techniques for handling difficult clients and traumatic reactions, (g) methods for establishing group safety, (h) techniques for effective coleading, and (i) instruction about vicarious traumatization and self-care. It contains didactic components, live demonstrations of skills used in each group session, and extensive role-play assignments so that trainees achieve competence in delivering the treatment program. For the role plays, trainees practice in groups in which two persons assume the role of coleaders and 3 or 4 persons act as group members. In each group one member is assigned a particular “problematic” role (e.g., monopolizing, displaying high anxiety, being sexually explicit, and engaging in resistant behaviors) to ensure that group facilitators are able to handle common problems that occur in groups. Using the Observation Checklist for PTSD Group Therapy (Alternative Rehabilitation Community,
2003), ARC trainers observe and rate the trainees’ role plays and offer them constructive feedback and assistance. Certification is awarded only to those who pass a multiple-choice posttest with 85% or more correct responses and meet the following standards during the observed role plays: the ability to follow the treatment manual skillfully, the capability of handling problematic behaviors, and the demonstration of sensitivity and skill in handling disclosures. In addition, certified ARC PTSD Group facilitators are required to receive regular supervision and to maintain their certification by attending refresher workshops (Alternative Rehabilitation Community, 2004).

The University of Pittsburgh Evaluations

The goals of the University of Pittsburgh evaluation of the ARC PTSD Group Therapy Program were to identify the strengths and weaknesses of the ARC PTSD Group Therapy Manual, to assess the implementation of the program in the participating agencies, and to investigate treatment outcomes. The researchers performed both process- and outcomes-related evaluations. Process evaluations included reviews of (a) the ARC PTSD Group Therapy Manual, including its basis in theory and research; (b) treatment group implementation including consistency across sites and selection of group facilitators in each site and; (c) methods of participant selection.

The outcomes-related investigations are still in progress at the time of this writing. Their aims are, first, to examine the degree of success of the PTSD treatment groups in affecting participant change in terms of “knowledge, attitudes and skills, behavior, and status” (University of Pittsburgh Office of Child Development Planning and Evaluation Project, 2003; p. 9), and second, to determine the impact of site characteristics on the effectiveness of the program. Site characteristics include (a) the
nature of the facility as determined by the kinds of females that they admit (e.g., their
types of crimes and behaviors, cultural and family backgrounds, ages, etc.); (b) facility
characteristics including size/capacity, type of facility (e.g., secure or nonsecure),
environmental safety, and types of programs offered; (c) PTSD group characteristics such
as the number of groups being run by the facility, the number of females in each group,
the frequency of the groups, procedures for handling traumatic reactions outside of group,
and client participation in the group process; and (d) facilitator characteristics including
age, gender, race, educational level, years of experience (University of Pittsburgh Office

The University of Pittsburgh also evaluated the data of the pilot study which ARC
conducted in 2001 and 2002, but had not analyzed. Currently, the review of the pilot
study, the ARC PTSD Group Therapy Manual, and the treatment sites have been
completed. The results are described below.

Analysis of ARC’s Pilot Study

ARC began a pilot study of the PTSD group therapy program in the latter half of
2001. Fifty females from six residential facilities for juvenile delinquents participated in
the study. Ten completed the study. Four instruments were administered pre and
posttreatment. They included (a) the Trauma Symptom Checklist for Children (Briere,
1996), a self-report measure for children between the ages of 8 and 16, (b) the Child
Report of Post-traumatic Symptoms (Greenwald & Rubin, 1999a), a self-report measure
based on DSM-IV (American Psychiatric Association, 1994) criteria for PTSD, (c) the
Parent Report of Post-traumatic Symptoms (Greenwald & Rubin, 1999b), a caregiver
report designed to assess PTSD based on DSM-IV criteria, and (d) the Adolescent

The University of Pittsburgh Office of Child Development Planning and Evaluation Project (2003) evaluated the data from the pilot study. They found that participants' scores on the Trauma Symptom Checklist for Children pretreatment and posttreatment were not significantly different, but “moved in the desired direction (i.e., decreased) following the (treatment) groups” (p. 4). On the Child Report of Post-traumatic Symptoms, the participants' pretreatment scores averaged 30 and posttreatment scores averaged 22. Average pretreatment scores on the Parent Report of Post-traumatic Symptoms were 36 and posttreatment scores were 19. Although these scores decreased, both scores following treatment were still above the cutoff rates of 19 for the Child Report of Post-traumatic Symptoms and 16 for the Parent Report of Post-traumatic Symptoms. The Adolescent Dissociative Experiences Scale cut-off scores are 3.7 or above. Pretest scores on this measure averaged 3.49 and posttest scores averaged 2.36. Probably as a result of the small sample size, none of the pre and posttest scores was significantly different; however, results showed a decrease in symptoms on all measures upon completion of the group therapy program.

Results of the Review of the ARC PTSD Group Therapy Manual

The purpose of the University of Pittsburgh process evaluation of the ARC PTSD Group Therapy Manual was to “determine its appropriateness and relevance in treating PTSD with an adolescent female offender population” (Zajac & Puzzanchera, 2004a; p. 1). This review examined the general content of the manual in terms of theory, treatment
goals, intensity or dosage, and the method of treatment delivery. It also surveyed the treatment literature to evaluate the effectiveness of the treatment approach, and based on this information, noted the strengths of the program and made recommendations for improvements. The researchers in the study (Zajac & Puzzanchera, 2004b) concluded that the ARC PTSD Group Therapy Manual “is a well-developed guide to treating PTSD in female juvenile offenders that includes many practices that are supported by research” (p. 6). Recommendations were made to strengthen the program. Examples of recommendations included the addition of experiential interventions such as role plays to further prevent relapse, training suggestions for group facilitators and supervisors, and changes in instruments used to assess the appropriateness of clients for the group. These suggestions will be incorporated into the next revision of the ARC PTSD Group Therapy Manual when the entire study has been completed.

Results of the Site Visits and Interviews Pertaining to the Implementation of Treatment

The University of Pittsburgh researchers conducted site visits at six agencies that included ARC PTSD Groups as part of their programming for delinquent females and interviewed 24 staff from these agencies (Zajac & Puzzanchera, 2005a). This was part of their process evaluation of the implementation of ARC PTSD Groups across treatment sites to determine treatment fidelity, or the extent to which agencies and group facilitators were adhering to the ARC PTSD Group Therapy Manual. Zajac and Puzzanchera concluded (2005b):

Through our site visits and interviews with facility staff, we found, for the most part, that facility staff are implementing the PTSD groups as intended and that there is minimal variation between participating sites.
These findings indicate that the (ARC PTSD Group Therapy Manual) is user-friendly and that facilitator training was effective in reiterating the curriculum guidelines. In addition, that group leaders so readily adhere to the curriculum is a testimony to the quality of the curriculum and the facilitator trainings (p. 9).

Recommendations included suggestions for (a) improving the training and the utilization of clinical supervisors, (b) enhancing the training of group facilitators, (c) adding booster sessions for clients who remain in residential programs after their completion of ARC PTSD Groups, (d) placing more emphasis on facilitator self-care, and (e) improving treatment integrity through site visits, changes in instrumentation, and in annual workshops (Zajac & Puzzanchera, 2005a).

Consequences of Not Treating Trauma/PTSD in Juvenile Delinquents

Despite increased knowledge about the high prevalence of PTSD among female juvenile delinquents, the traditional level of care continues (Greenwald, 2002a). Most detention centers, group homes, and residential treatment facilities for female juvenile delinquents are geared to the management of conduct disorders. This typically emphasizes confrontation and strict discipline, which can worsen the effects of past trauma and PTSD. Because symptoms of PTSD include avoidance (manifested by juvenile delinquents as run-away behavior, substance abuse, and noncompliance with authority) and hyperarousal (manifested as aggression), adolescents who are untreated are at risk to reoffend after discharge. The ramifications of this on society include the high costs of repeated, ineffective institutionalization and incarceration and a substantial impact on the thousands of children born to these troubled young women, who are just
beginning their childbearing years. The treatment of trauma exposure and PTSD is, therefore, an important area to address when developing gender-specific services for female juvenile delinquents.

Value to Treating Juvenile Delinquents with PTSD

The negative impact of trauma and PTSD on child development explains one potential pathway toward juvenile delinquency, a problem that is not well understood. Juvenile delinquency has deleterious effects on society, communities, families, and individuals. Consideration of trauma history compels one to view the juvenile offender as a whole person, not just a callous perpetrator (Steiner, Garcia, & Matthews, 1997). This opens the range of treatment interventions from the formerly narrow focus on criminal behavior to the broader sequelae of PTSD (Garbarino, 1999). Treating PTSD in female juvenile delinquents may result in decreased recidivism and cost of institutionalization. With prompt, early intervention after a traumatic event has occurred, delinquent behavior can be minimized (Eth & Pynoos, 1994). The treatment of PTSD in female juvenile delinquents would enhance the gender-specific services in a population whose needs have been typically neglected or inappropriately addressed due to the lack of research-based interventions.

Research Hypotheses

This study examined the effectiveness of the ARC PTSD Group Therapy Program, a 14-20-session, manual-based, cognitive-behavioral group therapy program administered to female juvenile delinquents who had PTSD or who had experienced trauma and had one or more symptoms of PTSD, but did not necessarily meet the full
diagnostic criteria for PTSD, and had been court ordered into group homes and detention centers throughout the state of Pennsylvania. The following hypotheses were expected to be met at the completion of treatment:

**Hypothesis 1**

The treatment group would have significantly reduced symptoms of PTSD in comparison to the control group. Because the ARC PTSD Group Therapy Manual was developed to address specific symptoms of PTSD, to improve coping skills and faulty cognitions related to these symptoms, and to prevent the relapse of symptoms, it was expected that by the end of treatment, PTSD symptoms would be reduced to the extent that participants no longer met *DSM-IV* (American Psychiatric Association, 1994) criteria for PTSD, or they would have significantly reduced severity of symptoms.

**Hypothesis 2**

It was expected that prosocial behavior would increase more significantly in the treatment group than in the comparison group. Symptoms of PTSD include avoidance of reminders of traumatic events, flashbacks, and hyperarousal. Avoidance may manifest in the form of oppositional behavior, truancy, and running away from home. Persons with PTSD may cope with intrusive experiences such as flashbacks through substance abuse, lashing out at others, and self-injurious behavior. Symptoms of hyperarousal may result in anger and aggression in response to minor stressors. It was expected that by resolving the symptoms of PTSD through the treatment program, participants would engage in more prosocial behavior such as choosing alternatives to violent behavior, managing impulsive behavior, taking responsibility for past maladaptive behavior, forming healthier relationships, and increasing self-care, rather than self-harm.
Hypothesis 3

It was anticipated that compared to the control group, members of the treatment group would have an improved outlook toward the future. Persons with PTSD frequently have a foreshortened sense of the future. In adolescents who are just beginning their lives, this symptom can result in lack of planning and in choosing instant gratification, rather than delaying pleasure to meet such goals as finishing school or obtaining a job. Because the ARC PTSD Group Therapy Program addresses this issue and helps participants to plan for the future, it was expected that those who completed the group would have a more positive outlook toward the future and would be more willing to work on self- and/or community-enhancing goals.

Hypothesis 4

It was hypothesized that the treatment group would have significantly less antisocial cognitive distortions than the comparison group by the end of treatment. The ARC PTSD Group Therapy Manual emphasizes the identification of and challenging of maladaptive thoughts, particularly those related to trauma and criminal behavior. Group sessions and homework assignments facilitate the development of more realistic thoughts, beliefs, and interpretations of traumas to create a more accurate view of the self, the world, and the future. Consequently it was expected that participants would be able to discern the difference between their responsibilities and those of others (i.e., that they would accept the fact that they were not responsible for the traumatic event, but are responsible for their current behavior).
Hypothesis 5

Treatment satisfaction of the treatment group would be related to the above variables and outcomes. It was expected that as participants’ PTSD symptoms decreased, their behavior and outlook toward the future would improve, and their cognitions would become more accurate and self-enhancing, that they would express more satisfaction with the group than would those members who had less improvement in terms of the above hypotheses. Thus positive responders would be more likely to respond optimistically about the group methods and its facilitators and to indicate that the group helped them to manage their feelings and behaviors related to trauma than those who may not have benefited from the group.
METHOD

This between groups case controlled design examined the effectiveness of the ARC PTSD Group Therapy Program to (a) reduce symptoms of PTSD, (b) increase prosocial behavior, (c) improve future outlook, and (d) decrease antisocial cognitive distortions. The subjects were the participants of a larger study being conducted by the University of Pittsburgh. The data was obtained from a subset of the University of Pittsburgh data (see Appendix D for the University of Pittsburgh’s methodology).

Participants

Participants, who had completed posttests between February 1, 2005 and May 31, 2006, were selected from the University of Pittsburgh’s database. The treatment sites included females who had diagnoses of PTSD and females who had experienced traumatic events with one or more symptoms of PTSD, but who did not meet the full DSM-IV (American Psychiatric Association, 1994) diagnostic criteria for PTSD. Diagnostic information was obtained from recent psychiatric or psychological reports and/or females’ performances on the ARC PTSD Interview (Alternative Rehabilitation Communities Inc., 2003a; see Appendix E). These are the inclusion criteria for ARC PTSD groups as they are typically run.

Participants in the comparison group were selected by different criteria because the comparison sites did not conduct ARC PTSD Groups and did not have the procedures in place for the ARC PTSD Group Therapy assessment process. Consequently, the selection criteria for the participants in the comparison sites were based on their results on the Child and Adolescent PTSD Checklist (Amaya-Jackson, McCarthy, Cherney, &
Newman, 1995). In order to be included, participants in the comparison group were required to meet the full diagnostic criteria for PTSD according to this measure.

All participants were anonymous to the researcher. The University of Pittsburgh study utilized numerical identification codes, the assignment of which was known only to the University of Pittsburgh researchers. No identifying information was revealed to the researcher of this study.

Measures

Few instruments have been developed to evaluate PTSD in juvenile delinquents. Most of the measures that were selected for this study had preliminary evidence of reliability and validity. However, none had existed long enough to have been thoroughly evaluated or well established. (See Appendix F for a listing of instruments and their related variables and constructs.)

*The Child and Adolescent PTSD Checklist (Amaya-Jackson et al., 1995)*

The Child and Adolescent PTSD Checklist is a self-report instrument developed to assess PTSD according to *DSM-IV* (American Psychiatric Association, 1994) criteria. At the time of its development, it was one of the first self-report measures (as opposed to structured interview inventories) for children. It was designed not only to be administered easily but also to be “child friendly” (Amaya-Jackson et al., 1995). According to Erwin, Newman, Morrissey, and Kaloupek (2000), the Child and Adolescent PTSD Checklist “is one of the few instruments that yield both a continuous symptom severity score and a *DSM-IV* diagnosis of PTSD” (p. 203).

The first section assesses children’s histories of traumatic events and their ages when the traumas occurred (e.g., “Can you tell us anything that happened to you that was
very scary or frightening?”) The second section instructs them to think about their worst traumatic incident and then answer 28 questions that describe PTSD symptoms according to DSM-IV (American Psychiatric Association, 1994) criteria; they are also requested to cite the frequency of these occurrences (e.g., Not at All, Sometimes, Most of the Time, and All of the Time). At the end of the scale, respondents are encouraged, in writing, to speak to therapists or staff if they desire to discuss any of the questions.

The Child and Adolescent PTSD Checklist is scored as follows: If a respondent answers affirmatively to having had a traumatic experience, she proceeds to the next 28 questions. If she answers negatively to having had a traumatic experience, she is finished and is not diagnosed with PTSD. The 28 items are scored in correspondence to the number of DSM-IV (American Psychiatric Association, 1994) responses necessary for each symptom area of PTSD (e.g., a diagnosis of PTSD is indicated by one or more re-experiencing symptom, three or more avoidance symptoms, and two or more symptoms of increased arousal that occur for the duration of more than one month and result in significant impairment in functioning). Higher numbers of symptoms endorsed indicate higher degrees of severity.

Amaya-Jackson and her colleagues (1995) tested the Child and Adolescent PTSD Checklist at three different sites. One was a specialized trauma clinic in North Carolina with 33 children and adolescents. The mean age was 11.2 (SD = 2.9) years. Seventy-three percent were female; 15% were Caucasian; and 82% were African American. The second site was in Boston and consisted of 51 incarcerated male adolescents with a mean age of 17.5 (SD = 1.5) years. Fifty-seven percent were Caucasian; 28% were African American; and 12% were Latino. The third site, an urban setting, utilized two samples of adolescents
who were being treated at Yale University. The first sample consisted of 36 children from the Adolescent Medicine Clinic. The mean age was 16.5 years (SD = 1.4). Ninety-four percent were female and 72% were African American. The second sample involved 11 children (7 female and 4 males), who were patients on the psychiatric inpatient unit. Of these the mean age was 17.1 (SD = 1.3) years. Ninety percent were Caucasians and 10% were Latino.

In terms of internal consistency, Cronbach alpha was as follows: .91 for the incarcerated male sample, .82 for the trauma clinic (largely female) sample, .90 for the adolescent medicine (largely female) sample, and .95 for the adolescent inpatient (largely female) sample. Test-retest reliability (one week) for the total sample was $r = .91$, $p<.001$ (Amaya-Jackson et al., 1995). The authors compared the Child and Adolescent PTSD Checklist with the Anxiety Disorders Interview Schedule (Brown, DiNardo, & Barlow, 1994), the Clinician Administered PTSD Scale (Blake et al., 1995) and the Kiddie Schedule for Affective Disorders (Orvaschel & Buig-Antich, 1987), the most commonly used instruments to detect PTSD in children and adolescents. They reported that depending on the instrument to which they compared their measure that the sensitivity ranged from .21 to .89 and specificity ranged from .59 to .89 when the response, “Sometimes,” was used as a symptom cutoff score for their instrument. When “Most of the Time” was used, sensitivity ranged from .33 to .80 and specificity ranged from .33 to 1.0.

How I Think Questionnaire (Barriga & Gibbs, 1996)

The How I Think Questionnaire is a 54 item self-report inventory “designed to measure self-serving cognitive distortions in antisocial youth” (Barriga & Gibbs, 1996; p.
between 13 through 20 years old, with a minimum of a fourth grade reading level. It can be administered individually or in a group format. It is based on four types of self-serving cognitive distortions in antisocial youth: Self-Centered, Blaming Others, Minimizing/Mislabeling, and Assuming the Worst. Questions such as, “If I see something I like, I take it” and “You have to get even with people who don’t show you respect,” are rated on six-point Likert-type scales (Agree Strongly, Agree, Agree Slightly, Disagree Slightly, Disagree, and Disagree Strongly).

Scoring is accomplished by assignment of the numbers from 1 (Disagree Strongly) to 6 (Agree Strongly) to each item according to the Likert scores. The total score is divided by the number of items completed to obtain a mean. Scores that are greater than 4.0 are considered suspect and those that are over 4.25 are considered invalid. Ultimately, scores are summarized into three categories, Overt (oppositional defiance and aggression), Covert (lying and stealing), and Overall Score (the average mean of the eight subscales). Scores are converted to percentiles with less than 73% = nonclinical, between 73% and 83% = borderline-clinical, and over 83% = clinical (Gibbs, Barriga, & Potter, 2001).

Barriga and Gibbs (1996) conducted a preliminary validation on a sample of 147 males, ages 14-20 years (M = 16.5, SD = 1.21). Thirty-seven percent were incarcerated. The remaining subjects were from an urban working class public high school and a suburban middle class public high school. Of the total sample 51% were Caucasian, 27% were African American, 3% were Latino, and 3% were Asian. Sixteen percent did not report their race.
Test-retest reliability was $r(135) = .91$, $p < .0001$. Internal consistency was high (Cronbach’s coefficient alpha = .96). The How I Think Questionnaire also had a high correlation with other self-report inventories of antisocial behavior. Its construct validity was favorable. Its correlation with the Externalizing Scale of the Youth Self-Report Form (Achenbach, 1991) was $r(118) = .55$, $p < .0001$ and with the Nye-Short Self-Reported Delinquency Questionnaire (Nye & Short, 1957) was $r(126) = .36$, $p < .0001$. Cognitive distortions accounted for 30% of the variance in externalizing behavior and supported the relevance of the four categories of cognitive distortions described above. The How I Think Questionnaire was less successful in discriminating criterion groups. For example, the urban high school group had high numbers of cognitive distortions, but low levels of delinquency.

_{The In-Program Behavioral Assessment (Latessa, 2002)_}

Although there are many predictors of recidivism in incarcerated individuals such as substance abuse and antisocial peer association, few measures have been developed to assess change in offender populations while they are incarcerated or in a managed environment where they are unable to demonstrate the antisocial types of behavior that they might demonstrate when they are free in the community (Latessa, 2002). The In-Program Behavioral Assessment was designed to assess behavioral change of persons living in managed environments and was intended to be completed by staff who are familiar with the individual and who have observed the individual for at least 30 days prior to completing the assessment. It contains 24 items that measure the following predictors of recidivism: peer relationships, acknowledgment of mistakes, use of non-violent alternatives, ability to handle frustration, responsibility taking, impulse control,
empathy, obedience of laws, capability of setting goals, ability to resolve conflicts, and awareness of the consequences of behavior. These areas are rated from “0” in which the person reliably meets, surpasses, or helps others in the behavior, to “4” in which she never or rarely performs the behavior. Scores can range from “0” to “96”; the greatest risk to reoffend is represented by higher scores. The four risk categories are as follows: High Risk = 58-96 points, Medium/High Risk = 39-57 points, Medium Risk = 25-38, and Low Risk = 0-24 points.

The In-Program Behavioral Assessment has been used with male and female adults and juvenile delinquents in Ohio and West Virginia. It demonstrated significant predictability of arrest ($p = .004$) and incarceration ($p = .018$) in adult offenders. It also correlated significantly with the Level of Service Inventory – Revised (Andrews & Bonta, 2001), an established risk instrument (Latessa, 2002).

The Future Outlook Inventory (Cauffman & Woolard, 1999).

The Future Outlook Inventory is a 15 item self-report inventory that reflects individuals’ orientations to the future. Responses are recorded on a four-point Likert-type scale (Never True, Rarely True, Often True, and Always True). Examples of questions are, “I can’t really plan for the future because things change so fast,” and “I will give up my happiness now so that I can get what I want in the future.” Scores are ranked from 1 to 4 in correspondence with the Likert scale. Higher scores demonstrate greater degrees of future orientation and planning. A study conducted by the MacArthur Research Network on Adolescent Development and Juvenile Justice (2002) found that the reliability of the Future Outlook Inventory was fair (alpha = .71) and internal consistency was adequate (alpha = .66).
The PTSD Group Participant Survey (Puzzanchera & Zajac, 2004a).

This is a satisfaction survey, completed by females at treatment sites only, that addresses females' perceptions of their experiences within the ARC PTSD Group. Requiring only five minutes for completion, the survey contains 11 statements that participants rate on a four-point Likert-type scale (Strongly Disagree, Disagree, Agree, and Strongly Agree). Examples of items are: “I understand what PTSD is;” “The group leaders treated me with respect;” and “I learned skills to manage the impact of trauma in my life.” Scores are rated from 1 (Strongly Disagree) to 4 (Strongly Agree) with higher scores corresponding to greater satisfaction with the group therapy program. It is a new survey that will be used for the first time in this study.

Procedure

As the primary consultant to ARC for the development of the ARC PTSD Manual, the researcher received permission from the Pennsylvania Commission for Crime and Delinquency (see Appendix G) to access any of the data generated by the University of Pittsburgh. All subjects were assigned confidential numerical codes so that the researcher did not have access to their identities. The researcher accessed copies of SPSS databases only.

This study followed the timeline set by the University of Pittsburgh (see Appendix H) for the intervals (e.g., pretests, midgroup, postgroup, and follow-up at one, three, six, and nine months) during which the instruments would be completed by the females, by group leaders, by facility staff, and by probation officers. However, this study used data from week 1 of the study through the completion of the posttests administered upon group completion. Groups started at different times in each facility. Some facilities
conducted more than one group simultaneously; others began new groups after earlier
groups were completed. This study followed only those participants who participated in
RESULTS

The University of Pittsburgh project began data collection in February 2005 and it is currently ongoing. Reported here are the data obtained through May 31, 2006. Thus far, 2 of the 7 treatment sites have dropped out, but both comparison sites remain in the study. Only 5 participants from the treatment sites and 5 from the comparison sites have completed posttests. Of the active treatment sites, 2 agencies had 1 participant each who completed posttests and 1 agency had 3 participants. The remaining 3 treatment sites have not yet had any participants who have completed posttests. One of these agencies has not conducted ARC PTSD Groups in more than one year because of internal problems. The second, after a period of staffing problems, is in the process of running a treatment group at this time. The third has conducted several groups and has obtained consents for at least 6 females since the study began, but has provided little or no subsequent data because of organizational issues. Of the comparison sites, 1 large agency has had 4 females who completed posttests and the other smaller one has had 1.

Nine of the 10 females who completed posttests ranged in age from 17 to 19. (The other participant’s demographic data did not have her date of birth.) Nine were Caucasian and 1 was African American. In regard to living situations, each of 4 females had lived with the same caretaker for her entire life; 3 had lived in two different caretaking situations; and 2 had been in three to four different caregiver situations. The prior living situation of 1 was unknown. Six females were taking one or more psychotropic medications; 2 were not taking any; and the medication status of 2 participants was unknown.
According to the Child and Adolescent PTSD Checklist (Amaya-Jackson et al., 1995), the types of traumas sustained included: incest, rape (stranger, acquaintance, date), witnessing violence (shootings, domestic abuse), physical abuse, and emotional abuse (being locked in a closet). Two participants from the comparison sites reported incidents as traumas that did not qualify as such (e.g., “I got adopted” and “My foot fell asleep and I twisted my ankle and I thought my ankle was broken”).

Statistical analyses of the data could not be performed because there were too few participants and a considerable amount of data was missing about those for whom posttest data was obtained. Only 1 participant in the treatment group completed the Child and Adolescent PTSD Checklist (Amaya-Jackson et al., 1995) at all three testing intervals: pretest (T1), midtest (T2), and posttest (T3). A second participant in this group completed T1 and T3. The remaining participants in this group completed only T2 and T3. For the comparison sites, 3 females completed assessments at all three data collection points; 1 female completed them at T1 and T3; and 1 finished them at T2 and T3.

After the study began, the University of Pittsburgh directed the sites to skip midpoint data collection for the In-Program Behavioral Assessment (Latessa, 2002), the How I think Questionnaire (Barriga & Gibbs, 1996), and the Future Outlook Questionnaire (Cauffman & Woolard, 1999) because that administration point had already passed without data collection. Thus they were to complete only T1 and T3 on these measures. For the In-Program Behavioral Assessment, 3 participants from the treatment sites and 1 from comparison sites completed T1 and T3. Two females in the treatment sites and 3 in the comparison sites completed T1 and T3 administration of the How I Think Questionnaire. One participant from the treatment sites and 3 from the
comparison sited completed the T₁ and T₃ administrations of the Future Outlook Inventory.

The PTSD Group Participant Survey (Puzzanchera & Zajac, 2004a), which was to be completed by the participants in the treatment group at T₃ only was finished by all 5 participants. An examination of these results provided informative, but limited information (see Table 1, below). Furthermore, the results could not be applied to the hypothesis (that treatment satisfaction of the treatment group would be related to PTSD severity, severity of cognitive distortions, antisocial orientation, and orientation toward the future) due to the small sample size and missing data for other variables.
Table 1: Descriptive Statistics for the PTSD Group Participant Survey

<table>
<thead>
<tr>
<th>Question</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I was comfortable sharing my experiences and feelings with the group.</td>
<td>5</td>
<td>3.20</td>
<td>.447</td>
</tr>
<tr>
<td>2. I understand what PTSD is.</td>
<td>5</td>
<td>3.60</td>
<td>.548</td>
</tr>
<tr>
<td>3. I understand how trauma has affected my life.</td>
<td>5</td>
<td>3.80</td>
<td>.447</td>
</tr>
<tr>
<td>4. I learned skills to manage the impact of trauma in my life.</td>
<td>5</td>
<td>3.40</td>
<td>.548</td>
</tr>
<tr>
<td>5. The group facilitators were knowledgeable about trauma.</td>
<td>5</td>
<td>3.60</td>
<td>.548</td>
</tr>
<tr>
<td>6. The group facilitators knew ways to manage PTSD symptoms.</td>
<td>5</td>
<td>3.80</td>
<td>.447</td>
</tr>
<tr>
<td>7. The group leaders treated me with respect.</td>
<td>5</td>
<td>4.00</td>
<td>.000</td>
</tr>
<tr>
<td>8. The group listened when I shared my feelings and experiences.</td>
<td>5</td>
<td>3.80</td>
<td>.447</td>
</tr>
<tr>
<td>9. I felt safe in the group sessions.</td>
<td>5</td>
<td>3.80</td>
<td>.447</td>
</tr>
<tr>
<td>10. The other group members treated me with respect.</td>
<td>5</td>
<td>3.80</td>
<td>.447</td>
</tr>
<tr>
<td>11. I know how to manage my feelings about past trauma(s).</td>
<td>5</td>
<td>3.80</td>
<td>.447</td>
</tr>
</tbody>
</table>

**TOTAL** 5 3.6909 .26191

*Table 1: Ratings for this measure were as follows: 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree.*

Examination of Table 1 shows that participants believed that they felt safe in the group, learned about PTSD, and became aware of ways in which trauma had affected their lives. They thought that they learned the skills necessary to manage their emotions and symptoms. They strongly agreed that the group leaders acted respectfully toward them and felt that their peers respected them. They believed that the group facilitators were knowledgeable about trauma and knew how to manage PTSD symptoms. Overall, this suggests that the participants thought that they benefited from the group in terms of learning the skills to manage their emotions and the symptoms related to trauma and PTSD.
Postmortem

A researcher from the University of Pittsburgh and representatives from each of the participating agencies were contacted by telephone and email to determine problems that might have interfered with the recruitment of participants and with data collection. Treatment agencies were asked about the number of ARC PTSD Groups that they had conducted since the beginning of the study, about the number of females that completed treatment groups, reasons for attrition, problems involved in conducting the research study, and suggestions for improving participation. The results are summarized below.

Five of the treatment sites responded either by telephone or by email. Neither of the comparison sites replied. Consequently information about these sites was obtained from the University of Pittsburgh researcher.

Although only 5 females from the treatment sites completed the study, 91 additional females who were not participants in the study actually concluded ARC PTSD Groups during the research period. One agency representative stated that only 1 of her agency’s participants completed the requirements of the study while 11 nonparticipants completed ARC PTSD Groups during the same time period. Another agency representative said that only 4 study participants completed the research process, but 16 nonparticipants also finished ARC PTSD Groups. A large agency representative reported that no females contributed data to the study, but that approximately 64 females completed ARC PTSD Groups during the course of the study. Two or more agencies identified each of the following themes as hindrances to data collection: (a) the exclusion of females that were adjudicated dependent, (b) the consent process, (c) the premature discharge of females, and (d) agency-specific problems. The University of Pittsburgh
researcher added the lack of administrative involvement in some agencies as a major factor.

Problems in the Selection Process

According to the University of Pittsburgh researcher, the researchers polled agencies to determine the adjudication status of the majority of females in their programs during the planning stages of the study. Based on the information that they received, they expected to enroll 150 females who were adjudicated delinquent or delinquent/dependent as participants in the treatment group. After the study began, however, 2 of the treatment sites, including the largest agency, found that the majority of their females were not adjudicated delinquent or delinquent/dependent, but dependent only. Although these females did not have a delinquent adjudication status, their judges had ordered them to receive treatment in programs designed for juvenile offenders because they had committed acts such as truancy, running away, assault, vandalism, etc., but had not been charged by the police. The representative of the large agency stated, "There is a serious lack of delinquent females ... The counties are avoiding placing delinquent girls as long as possible because of lack of funds from the state.... If the study were expanded to include (dependent) girls, the resources for girls to study would include greater numbers."

Difficulty with the Consent Process

Three agencies cited the consent process as problematic, particularly obtaining the consent of parents or guardians. Many of the group homes were not in proximity to parents. One person wrote,

There is very poor communication between (females) and their parents.... Parents only visit ONCE a month or not at all.... Parents ... rarely respond by mail....
Usually, by the time we are able to collect signatures, the youth has already
moved on through the (PTSD) group and it is too late to study them. It's very
frustrating.

She said that the best method of obtaining parental consent was “face to face” and
suggested, “If we could have the resources to travel to their homes ..., it would greatly
increase participation.”

The same agency reported difficulty obtaining consents of “7 out of 8 legal
guardians.” In some instances, females were appointed county guardians who “(did) not
agree to sign their wards into a research project.” In addition, agencies had difficulty
procuring copies of custody papers, which were required when guardians were not
parents. This added to the burden both of staff and of guardians.

According to the University of Pittsburgh researcher, other problems in obtaining
consent were related to agency-specific difficulties (e.g., time management and
communication with the researchers). Finally, some of the females, themselves, did not
consent to be in the study.

Premature Discharge of Participants

Two treatment sites cited premature discharge prior to completing groups as an
obstacle. One relayed, “4 to 5 girls were discharged close to finishing (the group).” The
other said, “We had some early discharges and AWOLs.” According to the data from the
University of Pittsburgh, discharge prior to the completion of the study was a primary
reason for attrition in the comparison sites. Of 22 females who did not complete the study
and for whom consents were obtained, 1 refused to complete the study and 17 were
released prior to posttest administration. (The remaining 3 did not meet the PTSD diagnostic criteria for inclusion.)

**Agency-Specific Problems**

Three agency representatives cited organizational problems as the chief hindrance to data collection. Two agencies reported that staff attrition prevented them from conducting ARC PTSD groups. One of these observed that staff attrition resulted in the loss of trained group facilitators. The program had barely sufficient staff to meet the Department of Public Welfare criteria for the necessary staff-to-resident ratio and could not afford to send any of their staff to the week-long ARC PTSD Group Facilitator Training Program because the program would be left short-staffed. One agency stated that their female programs were in a state of “transition.” Another said that Department of Public Welfare and Joint Commission on Accreditation of Healthcare Organizations accreditations taxed their agencies to such an extent that they “had to put (PTSD) groups on hold.”

Two agencies reported that ARC’s requirement that PTSD groups be conducted by cotherapists, rather than a single therapist, posed a problem with conducting groups and recommended that this prerequisite be changed. These agencies had problems with staff attrition and thought that they could run more groups with one therapist than with two.

**Lack of Administrative Involvement**

The researcher from the University of Pittsburgh referenced the lack of administrative “backing” in some of the treatment sites as a primary detriment to data collection. She said that although all agencies had Federalwide Assurances (see Appendix
D), which required the consent of administrators, the persons responsible for the data collection in the various agencies were not necessarily administrative staff and did not have administrative oversight to ensure that the research was accomplished. In some instances, problems in follow-through stemmed from "point persons" who neglected to ensure that the consent process, group therapy, and/or data collection took place as scheduled. The researchers sometimes sent measures for data collection for mid or posttreatment assessment and, even after follow-up telephone calls, did not get them back. She noted that not all of the agencies had this problem and that some were quite "organized" and "responsive."

Miscellaneous Concerns and Commendations

Several other recommendations were made by individual agency personnel. One person said, the "biggest challenge (to conducting research) is completing all the necessary paperwork for the research project. It is not difficult to complete, just hard to find the time to get it done." Another person recommended that researchers provide "a list of instructions clearly stating what the researchers need from the group leaders ... (and) include time frames of when data must be turned in ... something on one page which shows what you should do first, second, and so on."

A number of remarks were positive. Each of the five agency personnel stated that they thought that there was a need for ARC PTSD Groups for females in their agencies. One person commented, "It is a great curriculum. It is easy to run and we get great results (with the females)." Several statements were made about the methodology. One person said, "The first time (that data was collected) was confusing, now it is clearer." She did not recommend any changes to the methodology, as it is "easy the way it is." Other
positive remarks were: “Everything was smooth;” “Nothing (is recommended) at this point;” and “Being able to call/email (the University of Pittsburgh researchers) for questions/guidance has been valuable.” Thus, some agencies felt that they had mastered the data collection process and were doing well with the requirements of the study. All appeared to be satisfied with the ARC PTSD Group Therapy Manual.
DISCUSSION

ARC PTSD Groups were developed to treat PTSD in female juvenile offenders who are court-ordered into residential treatment centers. Although the treatment of PTSD may not be the sole mechanism for making female juvenile delinquents productive members of society, it may be crucial to the rehabilitation of some and a useful adjunct to the rehabilitation of others. A substantial body of research has demonstrated that exposure to trauma and PTSD are common factors among many female juvenile offenders (Abram et al., 2004; Cauffman et al., 1998; Committee on Adolescence of the American Academy of Pediatrics, 2001; Dixon et al., 2004; Evans et al., 1996; Greenwald, 2002a; Lipschitz et al., 2000; Scott, 1999; Wolfe et al., 2001; Wood et al., 2002; Zawacki, 2005, October) and suggests that untreated PTSD can lead to violence, aggression, other externalizing behavioral problems (Dodge et al., 1995; Garbarino, 1999; Giaconia et al., 1995; Lipschitz et al., 2000; Perry, 1998, 2002a, 2002b; Perry et al., 1995; Shields & Cicchetti, 1998; Streeck-Fischer & van der Kolk, 2000). Caught in a persistent state of fight or flight, female offenders with PTSD are at risk to reoffend without proper treatment.

ARC PTSD Groups equip females to utilize cognitive restructuring, relaxation techniques, problem solving, and other positive coping skills to manage stressful situations. As female juvenile offenders substitute these skills for former fight or flight behaviors, their recidivism rates are expected to decrease.

This study used a subset of the data generated by the University of Pittsburgh, which had received a grant from the Pennsylvania Commission on Crime and Delinquency to conduct outcomes research on ARC PTSD Groups. It was hypothesized
that the treatment program would significantly reduce PTSD symptoms, decrease delinquent behaviors and cognitions, and improve future outlook in the treatment group; it was also hypothesized that treatment satisfaction would be related to participants' outcomes in treatment. More than 15 months into the study, only five participants in the treatment group and five in the comparison group completed posttests and many of these did not complete assessments at all three data collection points. Consequently analyses could not be performed. The only data that yielded any information was the PTSD Group Participant Survey (Puzzanchera & Zajac, 2004a), which showed that participants believed that the group leaders were respectful and competent and that they, the participants, benefited from the group by learning to manage their PTSD symptoms. Although the results were disappointing, lessons learned from this study may benefit future research in this population, which typically has been understudied.

Strengths of this Study

Although insufficient numbers of participants were obtained to offer conclusions about ARC PTSD Groups, this study was the first of its kind to attempt to evaluate a manual-based treatment protocol that was (a) designed specifically for female juvenile delinquents in residential treatment and (b) taught to paraprofessional and uncertified staff through a performance-based training program. Until the ARC PTSD Project began, PTSD had not been routinely assessed or treated in female juvenile offenders in Pennsylvania. Few direct care staff were trained in the understanding and management of PTSD symptoms. When females disclosed trauma histories or expressed symptoms of PTSD, treatment was often intuitive in nature and might range from avoiding the trauma altogether to encouraging detailed disclosure of traumatic events for the purpose of
catharsis, whether or not the female was ready to disclose or the staff knew how to handle the consequences of the disclosure. Uninformed staff sometimes misinterpreted flashbacks or avoidance behaviors as “manipulation” and punished females for these symptoms. As Glisson (2006) observed,

Because of the large gap between what is known about effective services and what is actually practiced in the field, many children referred to child welfare, juvenile justice, and mental health systems receive ineffective services.... (S)ome children actually experience detrimental outcomes as a result of services performed by these systems.... (N)ot conducting research on these service systems would ensure that the service system would remain unknown and uncorrected. Thus, the lack of research can place children at risk. (pp. 92-93)

It is hoped that with this study, agencies will begin to comprehend and value the importance of clinical research so that empirically supported interventions are utilized and so that ineffective or potentially harmful treatments are eliminated.

Based on the gold standards for treatment outcome studies (Foa & Meadows, 1997), this study had several methodological strengths. First, a manualized treatment protocol was developed. Second, cofacilitators were required to complete five days of training with observed practice. To cofacilitate ARC PTSD Groups, the trainees had to meet both knowledge-based and performance-based criteria. Third, treatments groups were facilitated by more than one set of cotherapists. Fourth, measures included not only self-reports, but also observer reports. Finally, treatment was not withheld to females who did not wish to participate in the study.
Limitations

Sample Size

The greatest limitations to this study were inadequate sample sizes and incomplete data on those females who did complete posttests. Although ARC PTSD Groups conducted in the treatment sites included both participants of this study and nonparticipants, data was collected only on the participants. Far more females (estimated 91) completed ARC PTSD Groups in the treatment sites than those who were participants and completed posttests (5). The disparity was primarily a function of the consent process, of the exclusion females who were adjudicated dependent (as opposed to delinquent or delinquent and dependent), and of organizational and staffing problems within the participating agencies.

Sampling Method

Only participants who consented or assented to participate in the study and whose parents or guardians also consented took part in the study. This constituted a sampling error. Because the group homes are located throughout Pennsylvania, judges typically ordered the delinquent females to specific placements based on proximity to their families, the nature of their offenses, and openings in agencies. Consequently, random assignment could not occur.

Assignment of Participants

Staff in treatment sites selected participants for ARC PTSD Groups based on documentation of traumatic experiences, current PTSD diagnosis, the ARC PTSD Interview (Alternative Rehabilitation Communities Inc., 2003a; Appendix E), and selection criteria based on the ARC PTSD Group Therapy Manual and the ARC PTSD
Group Facilitators Certification Program. Females who were chosen met either the full criteria for PTSD according to the *DSM-IV* (American Psychiatric Association, 1994) or had subthreshold symptoms of PTSD. Because staff in the comparison sites did not participate in ARC programming, the University of Pittsburgh researchers selected participants based on their scores on Child and Adolescent PTSD Checklist (Amaya-Jackson et al., 1995). Females in this group were required to meet the criteria for PTSD. Consequently, treatment and comparison groups were not necessarily equivalent.

*Limitations of Measures Used*

Currently, there is limited research on the validity and reliability of measures to diagnose PTSD in children (Abram et al., 2004). There are also few measures designed for the assessment of juvenile offenders. Many of these instruments, including those used in this study, are new and require further development (Strand, Sarmiento, & Pasquale, 2005).

*Treatment Adherence and Use of Blind Evaluators*

Treatment adherence ratings were not utilized during the study; nor were audio or videotaped or direct observations made to assure treatment fidelity. Therefore it cannot be inferred that treatments provided at different sites were identical or that the cofacilitators followed the treatment manual. However, other precautions were taken, including the training of facilitators and structured observation of their role-plays of group lessons at training sessions. None of the evaluators was blind to the purposes of the study. Consequently, their expectancies could have influenced the results of the study.
Lack of Parental Involvement

Education and involvement of parents in the treatment of PTSD is important to enable them to support their children, to learn, teach, and model coping skills, and to help them to understand the role of avoidance in reinforcing the fear response (Bouchard et al., 2004). Studies have shown the benefits of involving parents of children with PTSD in their treatment (Bouchard et al., 2004; Cohen & Mannarino, 1996, 1998). Although the ARC PTSD Group Therapy Program does train and involve staff members who are responsible for the 24-hour care of participants, the program could be enhanced by also including parents and guardians in their children’s treatment.

Future Directions

This section begins with recommendations that would increase the likelihood of success of future studies with a similar scope and design as the present study. It is followed by suggestions for other types of designs that would contribute to the evaluation of the ARC PTSD Group Therapy Program.

Suggestions for Future Studies of the Same Scope

Future between groups case controlled studies would benefit by taking into account the daily challenges of agency work. Staff in residential treatment centers for delinquent youth are frequently overworked and underpaid. Their job responsibilities typically include directly supervising youth during treatment, activity, education, and leisure time, providing basic counseling services (individual and group), disciplining youth, managing crises, updating probation officers and parents on treatment progress, transporting youth to medical and other appointments, writing reports for court, and
documenting activities. They often do shift work because the youth are present 24 hours a day; they also work overtime when agencies are short-staffed.

Participation in research projects often requires that agencies alter existing procedures to comply with the research methodologies (McKay, 2006). Conducting group therapy is typically part of regular programming in residential treatment programs. The agencies that participated in this research project either added ARC PTSD Groups to their existing programming or used it to replace another group. Therefore, the group itself did not tax agency staff and in some ways made their jobs easier because they could follow a treatment manual for a program for which they had received training. However, doing tasks necessary for the research methodology (e.g., obtaining consent for youth and parents, administering assessments, and doing extra documentation) added additional labor to an already overworked staff that had no incentives for doing this extra work. Thus, they may have had little motivation to do more than simply conduct the ARC PTSD Groups. To make the research requirements easier for staff, agencies should consider modifying the job requirements for the staff who participate in research projects.

Research may be more successful if resources are given to the participating agencies to meet their concrete needs and to relieve some of the burdens to the staff (McKay, 2006). It would help to have a larger research team that may include the primary researchers and several graduate students who could visit agencies to recruit participants, obtain consents, administer those measures completed by participants, and make regular follow-up telephone calls to agency staff and probation officers to check their progress in data collection.
Taking extra steps to obtain support from agency administrators would aid future research (Brekke, 2006). The turnover among staff at varying levels throughout agencies can have a large impact on data collection. In some instances, staff who may “buy into” research projects at their inception may either leave agencies or be reassigned within their agencies. Achieving buy-in from the highest levels of agency staff might ensure that strong participation for the duration of the research would continue, despite turnover and staff burn-out. It is, therefore, recommended that researchers take time at the onset of research projects involving agencies to meet with and cultivate relationships with administrators to ensure their involvement and commitment for the duration of the project (Zanis, 2006).

The following steps should be taken to ensure that agency administrators and direct care staff buy into research projects. First, involving agency personnel representing both administration and other levels of staff in the planning of the research would help to invest them in the project (Brekke, 2006). During these meetings, researchers could ask agency personnel to outline potential obstacles to data collection. Second, research staff should prioritize developing relationships with and assisting personnel involved in carrying out the research (Brekke, 2006). This would include assisting staff with data collection in times of crisis or burn-out. Finally, researchers might offer compensation or incentives to agencies for their participation. Suggestions for incentives should be obtained from agency personnel themselves. Examples might include the provision of consultation to the agency or training to the staff (J. Zajac, personal communication, April 21, 2006).
In general, residential agencies would benefit from collecting their own data on the outcomes of their services. One of the consultation services that researchers could provide would be to help agencies to establish their own system for data collection. In this way research would be part of overall programming and not something special, requiring an additional consent process. Obtaining consents would become part of standard admission procedures. In this way treatment services could be routinely evaluated. Additionally, archival studies would be easier to conduct (R. Greenwald, personal communication, May 9, 2006).

In future studies, financial resources might be allocated differently. For example, instead of using a large number of agencies, fewer sites might be targeted with extra resources going to onsite liaisons, to incentives for participation, or to specific requests from agencies.

Finally, future studies of females in residential treatment programs geared toward the treatment of delinquent behavior should target not only those who are adjudicated delinquent, but also those who are adjudicated dependent and have histories of conduct offenses. Many youth who are adjudicated dependent have been removed from their homes due to physical or sexual abuse by their caretakers and have symptoms of PTSD (Greenwald, 2002b). Those who have committed criminal-type offenses are often court ordered to the same facilities as those who are adjudicated delinquent because many of their behaviors are similar (e.g., disrespect for authority, tendency to react with aggression, tendency to abuse alcohol or illicit drugs). Thus, future studies should also include dependent youth who have conduct problems.
Other Types of Evaluations

Future researchers might circumvent the problem of obtaining large numbers of subjects by using single case multiple baseline experimental designs. As with randomized controlled designs, they guard against threats to internal validity such as history, maturation, testing, instrumentation, and statistical regression (Kazdin, 1998). They can be conducted without the use of a comparison group (March et al., 1998) and with fewer participants.

Treatment fidelity studies would be an important addition to the evaluation of the ARC PTSD Group Therapy Program. This could be accomplished through direct observation or the use of audio or videotapes.

The ARC PTSD Group Therapy Program contains a number of components that could be studied in the future. The ARC PTSD Group Facilitator Certification Program utilizes knowledge-based and performance-based measures in the form of posttests to certify facilitators. The training program could be evaluated by incorporating these same measures as pretests and then comparing pretest and posttest scores. Further, trainees could rate their degrees of satisfaction with the training. Later, these ratings could be compared with treatment adherence to determine whether or not satisfaction with the training related to treatment fidelity.

Finally, the ARC PTSD Program would be enhanced in the future by adding a parent component. Because the program already includes the education of caregiving staff, this component could be easily adapted for parents and guardians. Consideration could also be given to the development of a therapeutic component that would directly involve parents with their children. This would require certain screening of parents,
however, to insure the fact that those who have victimized their children are not included (March et al., 1998).

Summary

This study did not yield data that could be analyzed in a meaningful way. Consequently it did not shed light on the ability of ARC PTSD Groups to reduce participants' symptoms of PTSD, to increase their prosocial behaviors, to improve their outlooks toward the future, or to decrease their antisocial cognitive distortions. It did, however, provide a snapshot of the problems that exist in conducting clinical research in residential programs that treat female juvenile offenders. It also yielded preliminary evidence that participants in ARC PTSD Groups believed that they benefited from the group in terms of learning the skills to manage their emotions and their symptoms related to trauma and PTSD.

Staff members in residential agencies have large workloads and low pay; they typically begin their careers with the high motivation to help abused and traumatized youth, only to discover that their clients' behaviors can be defiant, violent, manipulative, and dangerous and rarely improve with caring and support alone. Consequently, they must put significant energy into managing crises and disruptive behavior and learning the skills necessary to do this effectively. Agencies, coping with limited funding and staff turnover, must provide treatment for females with severe behavioral problems and mental health conditions while satisfying the requirements of various accrediting bodies. Adding additional tasks to these agencies and staff in the form of research can be daunting.

Research in residential treatment facilities for female juvenile delinquents may be more successful if researchers (a) obtain “buy-in” and support from the highest levels of
agency administrators; (b) involve agency staff in the early planning stages of research and throughout the project; (c) find ways to meet agencies’ concrete needs and relieve some of the burdens of staff; (d) identify direct ways in which the research might benefit the agency in the long and short-term; (e) offer incentives to agencies such as consultation and training; and (f) support agencies in developing systems to collect data on their own services. Consideration should also be given to the use of multiple-baseline, single-case experimental designs which require fewer subjects and to an evaluation of other aspects of the ARC PTSD Program, such as the ARC PTSD Group Facilitator Certification Program.

ARC PTSD Groups continue to be part of regular programming in several agencies throughout Pennsylvania. The University of Pittsburgh also persists in collecting outcomes data for this project. It is hoped that both of these endeavors will ultimately benefit female juvenile offenders with histories of trauma and PTSD to enable them to become productive members of society.
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## APPENDIX A

A Multimodal Approach to the Treatment of PTSD

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>AREAS OF INTERVENTION</th>
<th>TREATMENT GOALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior</td>
<td>- Insomnia&lt;br&gt;- Dissociation&lt;br&gt;- Self-mutilation&lt;br&gt;- Promiscuity&lt;br&gt;- Victimization of others&lt;br&gt;- Sexual dysfunction&lt;br&gt;- Aggression&lt;br&gt;- Withdrawal&lt;br&gt;- Suicide attempts&lt;br&gt;- Need for control&lt;br&gt;- Unsafe behavior</td>
<td>- Eliminate maladaptive behaviors and replace them with positive coping skills and responsible behaviors&lt;br&gt;- Take steps to ensure safety&lt;br&gt;- Prevent relapse</td>
</tr>
<tr>
<td>Affect</td>
<td>- Anger&lt;br&gt;- Re-experiencing unwanted feelings&lt;br&gt;- Numbness&lt;br&gt;- Anxiety&lt;br&gt;- Panic attacks&lt;br&gt;- Guilt&lt;br&gt;- Grief&lt;br&gt;- Shame&lt;br&gt;- Depression&lt;br&gt;- Fear&lt;br&gt;- Hopelessness</td>
<td>- Understand the relationship among thoughts, feelings, and behavior&lt;br&gt;- Recognize and express a broad range of feelings&lt;br&gt;- Develop positive ways to cope with feelings&lt;br&gt;- Desensitize through therapeutic exposure to traumatic material</td>
</tr>
<tr>
<td>Sensation/Health</td>
<td>- Re-experiencing traumatic sensations&lt;br&gt;- Headaches&lt;br&gt;- Stomachaches&lt;br&gt;- Gynecological problems&lt;br&gt;- Head injuries&lt;br&gt;- Eating disorders&lt;br&gt;- Problems with touch&lt;br&gt;- Psychosomatic illness</td>
<td>- Understand the connection among trauma, thoughts, feelings, behavior, and physical health&lt;br&gt;- Learn relaxation and other ways to cope with negative feelings and situations</td>
</tr>
<tr>
<td>Imagery</td>
<td>- Flashbacks&lt;br&gt;- Traumatic dreams&lt;br&gt;- Negative body image&lt;br&gt;- Daydreams</td>
<td>- Educate about flashbacks and traumatic dreams&lt;br&gt;- Develop coping skills and positive imagery&lt;br&gt;- Limit daydreaming by attending to the present</td>
</tr>
<tr>
<td>DOMAIN</td>
<td>AREAS OF INTERVENTION</td>
<td>TREATMENT GOALS</td>
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<tr>
<td></td>
<td>• Intrusive thoughts</td>
<td>• Learn about trauma and its effects</td>
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<tr>
<td></td>
<td>• Lack of knowledge about PTSD</td>
<td>• Recognize and develop strengths</td>
</tr>
<tr>
<td></td>
<td>• Memory problems</td>
<td>• Learn to cope with intrusive thoughts</td>
</tr>
<tr>
<td></td>
<td>• Learned helplessness</td>
<td>• Challenge and replace dysfunctional thoughts and beliefs</td>
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<tr>
<td></td>
<td>• Suicidal ideation</td>
<td>• Be able to recall as much of the traumatic events as possible</td>
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<td></td>
<td>• Victim thinking</td>
<td>• Accept that some memories may not be retrieved</td>
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<td></td>
<td>• Self-blame</td>
<td>• Make sense of traumatic events and put them into perspective</td>
</tr>
<tr>
<td></td>
<td>• Low self-esteem</td>
<td>• Modify views of the self, the world, and the future to incorporate the trauma in adaptive ways</td>
</tr>
<tr>
<td></td>
<td>• Cognitive distortions in many life areas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Learning difficulties</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Distorted view of the self, the world, and the future</td>
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<tr>
<td>Cognitions/Knowledge</td>
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<tr>
<td>Interpersonal</td>
<td>• Unhealthy relationships with the same and/or opposite sex</td>
<td>• Learn the attributes of healthy relationships with both sexes</td>
</tr>
<tr>
<td></td>
<td>• Poor family relationships</td>
<td>• Develop realistic expectations of family members</td>
</tr>
<tr>
<td></td>
<td>• Problems with intimacy</td>
<td>• Begin to trust</td>
</tr>
<tr>
<td></td>
<td>• Problems with trust</td>
<td>• Develop positive qualities to attract healthy peer relationships</td>
</tr>
<tr>
<td></td>
<td>• Problems with authority</td>
<td>• Learn to respect legitimate authority</td>
</tr>
<tr>
<td>Drugs/Medicine</td>
<td>• Substance abuse</td>
<td>• Refer to drug and alcohol education and treatment</td>
</tr>
<tr>
<td></td>
<td>• Possible need for medication</td>
<td>• Refer to physician or psychiatrist for medical treatment</td>
</tr>
</tbody>
</table>
APPENDIX B

Group Therapy Agreement

The Post-Traumatic Stress Disorder will begin on ___________ at __________ o’clock. The group will meet _______ time(s) per week. It will help you to understand and cope with different types of trauma and learn how trauma affects people. The group leaders are ________________________________.

Please write three strengths that you will use to help make the group better. Some examples of helpful skills are, listening, supporting others, enforcing group rules, summarizing what is happening in the group, giving positive feedback, encouraging quiet peers to speak, challenging or confronting others in a helpful way, keeping people on track, and offering ideas to solve problems.

Three strengths that I will use in the group are:

1. ____________________________________________________________
2. ____________________________________________________________
3. ____________________________________________________________

Please list three goals that you promise to work on in the group. You will be responsible for working on your goals and helping your peers to meet their goals, as well.

Three goals that I will work on in the group are:

1. ____________________________________________________________
2. ____________________________________________________________
3. ____________________________________________________________

I promise to work on my goals and the goals for each group session. I will use my strengths to make the group better and to help my peers to meet their goals. I agree to follow the rules that the group makes.

_________________________ ______________________
Student Signature Date

As group leaders, we agree to teach you and your peers about trauma, PTSD, and how to cope and heal. We will help you to meet your goals. We will make sure that the group is safe and that everyone receives help and support.

_________________________ ______________________
Group Leader’s Signature Date

_________________________ ______________________
Group Leader’s Signature Date
APPENDIX C

Session-by-Session Description of ARC PTSD Groups

All ARC PTSD Groups begin with setting an agenda and reviewing assigned homework. They conclude with homework assignments for the next session, a summary of the session, and a relaxation exercise. The following sections describe the content of each session.

Session 1: Introduction and Relaxation Training

The purpose of the first group is to introduce the program, to establish rapport among members and group leaders, to introduce the cognitive model, to explain the limits of confidentiality, to establish group rules, to elicit members’ hopes and fears about participation, to warn them of potential side effects (e.g., flooding and freezing; Feeny & Danielson, 2004), to teach them what to do if these side effects occur, and to practice diaphragmatic breathing (Taylor, 2001). The group is introduced as follows:

The purpose of this group is to help you learn about trauma and Posttraumatic Stress Disorder, or PTSD, and how to cope with it. We will use education and a variety of interesting exercises. You will be asked to share your thoughts and feelings about your trauma(s) and do homework that will help you between each group. (Alternative Rehabilitation Community, 2004, p. 25)

Adapted from Kubany and Watson (2002), the cognitive model is explained as follows:

Everyone in this group has been through a traumatic event or had something bad happen to her. The way you think about yourself and the trauma affects how you feel. Although you cannot change the bad things that happened to you, you can
change the way you think about them. (Alternative Rehabilitation Communities Inc, 2003, p. 25)

Members receive a binder for handouts distributed throughout the group and a journal for recording their thoughts, feelings, imagery, etc. throughout the course of the group. For homework they are asked to practice diaphragmatic breathing twice daily and to report thoughts and feelings about the group in their journals. A volunteer is assigned to make a poster listing the group rules to be displayed in the group room.

Session 2: Safety

The goals of this session are to learn the importance of safety and of ways to achieve it and to practice progressive relaxation (Davis, Eshleman, & McKay, 2000). Members share their strengths and goals from their group therapy contracts (see Appendix B). Next, members create an animal from clay and use art supplies to make a safe environment for it. This is followed by a discussion of safety needs, methods to achieve safety, and ways in which group members can create a safe environment for one another within the group. For homework, they must practice diaphragmatic breathing at least five times per day and record their thoughts and feelings pertaining to trauma in their journals.

Session 3: Introduction to Trauma and PTSD

In this group members learn basic information about trauma and PTSD. This includes reading and discussing the booklet, “About Post-Traumatic Stress Disorder” (Channing L. Bete Co., 1991) and watching and discussing the videotape, “Break the Silence: Kids Against Child Abuse” (AIMS Multimedia, 1994). The session concludes with the practice of guided visualization (Davis et al., 2000). For homework, they must
practice diaphragmatic breathing at least five times per day and record their thoughts and feelings pertaining to trauma in their journals.

Session 4: Feelings Identification

The aim of this session is for members to learn a variety of emotions, including feelings commonly associated with trauma, to identify their personal feelings about their traumas, and to learn the importance of talking about feelings. After the facilitators distribute a list of feelings and their definitions, members play feelings charades to associate nonverbal behavior with feelings. Following a minilecture about common feelings pertaining to trauma (e.g., anger, shame, guilt, numbness, etc.), facilitators instruct group members to fill an 8 ½” by 11” sheet of paper with colors that represent the feelings that they had during their worst trauma. Using a modification of O'Connor's (1983) Color Your Life Technique, they make the quantity and intensity of each color proportionate to the degree and pervasiveness of each of the feelings that they experienced. Then they share their feelings with the group. For homework for the remainder of the program, they must practice diaphragmatic breathing at least 10 times in everyday situations and record thoughts and feelings pertaining to trauma in their journals. From this session through the remainder of the program, short relaxation exercises that include breathing, imagery, and self-affirmation are selected from a relaxation program developed by Allen and Klein (1996).

Session 5: Managing Self-Defeating Thoughts

The goals of this session are to learn how thoughts affect feelings, to identify dysfunctional thoughts related to trauma, and to develop more rational ways of thinking. The session includes a minilecture about the interaction among thoughts, feelings, and
behavior. Members read aloud from two handouts, one about common thinking errors adapted from Burns (1980) and the other describing how to cope with distressing feelings by identifying and challenging dysfunctional thoughts. In two group exercise the members brainstorm negative thoughts that may be associated with traumatic experiences and identify specific dysfunctional thoughts that they have had about themselves, the world, and the future. Each member identifies her most distressing thought pertaining to her traumas. Her peers help her to brainstorm alternate, rational ways of thinking. From these ideas she selects the rational response(s) that help her the most and records them on an index card to display as a reminder. For homework, members are given materials and instructed to make collages that depict their traumas and the ways trauma has affected their thoughts, feelings, and behavior. In addition, they are asked to start “catching” their negative thoughts each day and to record them in their journal along with rational responses (Kubany & Watson, 2002).

**Session 6: Disclosure of Traumatic Events**

In this session members show their collages and reveal details of their traumas and ways in which trauma has affected their thoughts, feelings, and behavior. By this time group cohesion has generally been developed and members are encouraged to support one another and offer rational alternatives to dysfunctional thinking. This is often an intense lesson in which members relate the nature and details of their trauma(s) for the first time. In larger groups (7-10 members) this group may take two sessions to allow each member time to relate her experiences, challenge cognitive distortions, and receive support from the group.
Session 7: Personal Symptoms of PTSD

The purpose of this session is to teach group members about how the body and brain react to trauma (the fight-flight-freeze response) and how trauma affects memory, thoughts, feelings, sensations and images; to help them to identify their responses to trauma in each of these areas; to recognize that other members share similar reactions; and to learn the importance of talking about traumatic experiences. Minilectures and handouts describe the fight-flight-freeze response and demonstrate ways that trauma affects thoughts, feelings, sensation, images, and memory. Group members complete and discuss a worksheet that helps them to describe their thoughts, feelings, physical responses, sensations, and visual images pertaining to their worst trauma. They are encouraged to select their worst trauma because dealing with this most difficult trauma will equip them to cope with other traumas that they have experienced.

Session 8: Dissociation and Depersonalization

Many view dissociative symptoms, including the numbing of emotions and sensations, detachment, derealization, lack of awareness of immediate environment, and dissociative amnesia, as fundamental symptoms of PTSD. It is important to treat dissociation because high levels of dissociation may undermine treatment because clients may dissociate and lack recall of treatment information and experiences (Feeny & Danielson, 2004). The aim of this session is to teach members about dissociation and depersonalization, common coping methods for PTSD. Facilitators give a minilecture about dissociation and depersonalization and members participate in an exercise that uses a symptom checklist. The intent is to alert members to dissociative symptoms, so that they can address them in individual therapy and in the therapeutic milieu.
Session 9: Intrusive Experiences

This session teaches members about traumatic dreams, flashbacks, and intrusive images and how to cope with them. The goal is for them to replace distressing images with more realistic and positive ones. After a minilesson about flashbacks, traumatic dreams, and traumatic images, members review a handout of coping skills. As a group exercise, they draw a distressing image concerning their worst trauma and record associated negative thoughts about themselves. Then they draw a new image in which the ending has been changed in a way that gives them relief. They share their negative emotions and thoughts pertaining to the original drawing and help each other to formulate more realistic self-statements, which they record individually on index cards. Prior to the relaxation exercise, the members offer positive affirmations to one another.

Session 10: Health and Physical Sensations

In this lesson members identify their health and physical concerns related to their traumas and learn better ways to cope with them. A minilecture explains how trauma can affect the body and body image; how emotional problems can manifest in physical symptoms; and how some people cope through self-mutilation and/or eating disorders. As an exercise, the members are given a blank piece of paper and asked to draw an outline of their bodies. They are told to use colored markers and pencil to identify on the outline those areas of their body that were affected in any way by the trauma. Then they take strips of paper shaped like adhesive bandages, write coping skills on them, and put them on injured areas. They share their projects with their peers and obtain feedback.
Session 11: Self-Awareness

People who have sustained traumas often have difficulty in discerning when it is appropriate to reveal information about their traumas to others and when it is inappropriate to do so. The purpose of this lesson is for members to identify aspects of themselves that they express to or conceal from others, learn the value of self-disclosure and obtaining feedback from trusted others, and learn how to discern the time to reveal personal information and when to keep it private. A minilecture teaches them about the value of gaining knowledge about the self by personal experience and from feedback from others. They learn appropriate and inappropriate forums for disclosure of private information. During a group exercise, members make masks from art materials. On the outside they depict aspects of themselves that they reveal to others and on the inside they represent those that they endeavor to conceal. Finally, they share their masks with their peers and obtain feedback.

Sessions 12 and 13: Interpersonal Relationships, Parts I and II

The purpose of these sessions is to help members to identify characteristics of healthy relationships, to learn the warning signs of harmful relationships, to assess the quality of their current relationships, to learn skills and characteristics that they must develop to attract positive peers, and to develop an action plan to improve their relationships. Exercises in these lessons utilize worksheets designed to elicit members' opinions about healthy and unhealthy or harmful relationships, checklists contrasting characteristics of supportive relationships and those of abusive relationships, and a self-assessment and behavioral plan that each member completes as homework after Session 12 and shares with the group during Session 13.
Session 14: Loss

This session addresses grief and loss following trauma with the aim of helping members to understand how grief and loss pertain to trauma, to learn different ways in which people grieve, and to prepare a ceremony to express their grief together. A structured discussion about grief and loss is conducted and the members plan a ceremony to take place at the last session. As an exercise, they decorate shoe boxes and place photographs, drawings, poems, symbols, etc., that express their grief and loss. For homework, guided by a worksheet, they prepare to tell their trauma story and the new perspectives that they have formed about themselves, the world, and future.

Session 15: Ceremony and Celebration

In this session the members relate their trauma narrative; describe the new meaning that they have assigned to the trauma; describe their transformed views of the self, the world, and the future; and list realistic goals for the future and action plans to achieve them. The group concludes with the ceremony and refreshments.

Problem-Solving Mutual Support Group

The Problem-Solving Mutual Support Group may be inserted into the ARC PTSD Group Therapy Manual as a separate session when group leaders judge that members' symptoms or anxiety are so high that they would not be able to attend adequately to the group lesson. In this group, members describe problems for which they need help, triage the needs of individuals and the group, and use problem-solving to develop solutions to as many concerns as possible. Individuals experiencing traumatic reactions receive support, learn coping skills, and are assisted with feelings aroused by their peer's disclosures.
APPENDIX D

Methodology of the University of Pittsburgh Study

Participants

The participants were female offenders who were between 12 and 21 years old and were housed in juvenile facilities in Pennsylvania. They were either enrolled in the ARC PTSD Groups at the treatment facilities or met the eligibility criteria (see below) for participation in the comparison sites. The courts, not the researchers, were responsible for decisions regarding the assignment of individuals to facilities and dictated the composition (e.g., racial, ethnic, HIV status). Some participants had been specifically court-ordered into programs that offered ARC PTSD Groups. All participants were adjudicated delinquent or delinquent and dependent. They were required to have been court-ordered into residential programs for a minimum of six months to allow for completion of the ARC PTSD Group. Because of the educational components of the ARC PTSD Manual, all participants had to be able to read, write, and comprehend English. The University of Pittsburgh planned to recruit a total of 300 subjects for the study (150 in the treatment group and 150 in the comparison group).

Treatment Sites

The treatment sites consisted of seven agencies. Basic training about the recognition and treatment of PTSD was provided for all staff in these agencies. It was conducted by paraprofessionals trained by ARC. Additionally, all cofacilitators completed the five-day ARC PTSD Group Facilitator Certification Training. Each of the participating agencies had been conducting PTSD groups for six months to four years.

1 Adapted from Farber and Zajac (2004)
prior to the evaluation. Treatment groups had become part of their ongoing programming. Because the scope of the ARC PTSD Project included the training of juvenile court judges in the incidence and treatment of PTSD in female juvenile delinquents, many of the delinquent females at these agencies had specifically been court ordered to those agencies so that they would participate in ARC PTSD Groups.

Each agency selected its own group participants through (a) a review of psychological and psychiatric reports indicating histories of trauma and current diagnoses of PTSD, (b) the ARC PTSD Interview (Alternative Rehabilitation Communities Inc., 2003a; see Appendix E) developed by the Alternative Rehabilitation Community to assess symptoms of PTSD according to *DSM-IV-TR* (American Psychiatric Association, 2000) criteria, and (c) staff decisions about individual readiness for group therapy. According to the ARC PTSD Group Therapy Manual and the ARC PTSD Group Facilitator Certification Training, females who were exclude from treatment groups included those with severe borderline or narcissistic personality disorders, severe and uncontrolled aggression, active psychosis, active suicidal ideation, and developmental disabilities, such as autism, mental retardation, or extreme emotional immaturity, that would limit their participation in the group (Alternative Rehabilitation Community, 2004).

*Comparison Sites*

Two different agencies served as comparison sites. Staff in one agency had been trained by ARC in the recognition and treatment of PTSD, but did not participate in the ARC PTSD Group Facilitator Certification Training Program and the agency did not
conduct ARC PTSD Groups. The other agency had not taken part in any of the ARC training programs, but agreed to serve as a comparison site in the research study.

According to Cauffman et al. (1998), half of females in juvenile facilities have PTSD. Therefore, to obtain 150 participants in the comparison group, the University of Pittsburgh planned to select 400 females from the comparison sites to complete the Child and Adolescent PTSD Checklist (Amaya-Jackson et al., 1995). Those who met the criteria for PTSD according to this measure would be included in the study.

**Apparatus**

*Record Reviews*

Facility staff provided the following information about participants: current age, age at referral to the facility, race, primary living arrangements outside the facility, history of involvement with Children Youth and Families Services, current reasons for being in the facility, number and type of prior arrests, number of past secure detention admissions, number and nature of previous disposition orders, current and prior psychological diagnoses including scores for Global Assessments of Functioning, highest school grade completed, current school attendance, results of IQ tests, record and type of learning disabilities, other current treatment activities, and history of drug/alcohol abuse or addiction. Probation officers provided information about living arrangements, involvement with the Children Youth and Families System, number of arrests or contact with the law, participation in ordered or voluntary after-care treatment, hours and types of community service performed, school attendance and performance if applicable, and employment status if applicable (Farber & Zajac, 2004).
Assessments Completed by Program Staff or Probation Officers

Clinical Contact Session Rating (Simourd, 2003). This form, which is completed by cofacilitators after each session, contains five items and takes five minutes to complete. It assesses each group member’s degree of involvement in each group in terms of attendance, participation, comprehension, insight, behavior, and attitude, as well as her overall performance, and any specific comments the rater may wish to add. It utilizes a Likert-type rating (Far Below Expectation, Below Expectation, Meets Expectation, Above Expectation, and Far Above Expectation).

In-Program Behavioral Assessment (Latessa, 2002). This assessment measures group members’ behavior in the program while they are attending PTSD groups. It is completed by program staff during the first week of treatment, in the middle of treatment, at the end of treatment, three months post treatment, six months post treatment, and eight months post treatment (i.e. one year after the commencement of treatment). If a participant is discharged from the program prior to one year after starting the treatment group, her probation officer is required to complete the questionnaire two months after release from the program and every two months thereafter until the female has been in the study for one year or is discharged from probation, or the study ends.

Probation Officer Survey (adapted by Puzzanchera & Zajac, 2004b, from Halliday & Graham, 2000). This survey contains seven items and takes five minutes to complete. It is done by probation officers two months after females’ release from their treatment facility and every two months thereafter until females have been in the study for one year or are discharged from probation or the study ends. Probation officers rate females’ general attitude, behavior at school, performance on schoolwork, ability to get
along with other people at home, behavior in the community, behavior at work, and performance at work in comparison to other females on probation. They rank them on a four point Likert-type scale (Poor, Fair, Good, and Excellent). Probation officers may also select “Not Applicable” or “Don’t Know” for each item. Although there is no psychometric data for the adapted survey, reliability for Halliday and Graham’s (2000) original scale is .95.

Assessments Completed by Group Facilitators

Observation Checklist for PTSD Group Therapy (Farber & Zajac, 2004; adapted from Alternative Rehabilitation Communities Inc., 2003a). Following each group session, cofacilitators complete the Observation Checklist for PTSD Group Therapy. This checklist contains questions specific to each of the 15 group sessions and the Problem-Solving Mutual Support group. For each of the specific goals outlined in the ARC PTSD Group Therapy Manual for each lesson, coleaders rate the number of group members who met each goal on a Likert-type scale (All, Most, A Few, and None). Specific content areas of every lesson are listed (e.g., for the first lesson one of the statements was “The exercise on hopes and fears was conducted”). Coleaders place check marks on each statement that was true of the material that they covered in the lesson. Coleaders specify any alterations they made in the group format or content and record reasons why they may not have achieved all the content areas outlined in the manual. Finally, they write suggestions for the improvement of each session.

Assessments Completed by the Female Participants

All of the following instruments are completed by the participants. They are all administered at the beginning of treatment, mid-treatment, at the end of treatment, and
one month, three months, six months, and eight months posttreatment, except the PTSD Group Participant Survey (Puzzanchera & Zajac, 2004a), which is completed only once by the treatment group at the end of treatment.

*The Child and Adolescent PTSD Checklist (Amaya-Jackson et al., 1995).* This measure, which is described in further detail in the Method section of this document, is a self-report of traumatic experiences and symptoms of PTSD. It contains 28 items and takes 20 minutes to finish.

*How I Think Questionnaire (Barriga & Gibbs, 1996).* This questionnaire (see the Method section of this document for more information) measures cognitive distortions and problematic behavior in antisocial adolescents. It contains 54 items and takes 15 minutes to complete.

*Rosenberg’s Self-Esteem Inventory (Rosenberg, 1965).* This inventory measures perception of self-worth, self-satisfaction, self-respect, and ability. It contains 10 items and takes five minutes to complete. Examples of questions include, “On the whole, I am satisfied with myself” and “All in all, I am inclined to feel I am a failure.” Questions are rated on a 4 point Likert-type scale (Strongly Agree, Agree, Disagree, and Strongly Disagree).

*The Future Outlook Inventory (Cauffman & Woolard, 1999).* This 14 item questionnaire (see the Method section of this document for more information) measures future orientation, a condition affected by PTSD. It takes 5-10 minutes to complete.

*The Norwicki and Strickland Locus of Control Scale (Norwicki & Strickland, 1973).* The Norwicki and Strickland Locus of Control Scale measures perceived control
The PTSD Group Participant Survey (Puzzanchera & Zajac, 2004a). This is a satisfaction survey (described in the Method section of this document) that is completed by females at treatment sites only. It addresses their perceptions of their experiences within the treatment groups. It contains 11 items and takes five minutes to complete.

Site Visits

To investigate the differences and consistencies among the treatment sites, the researchers visited each of the treatment sites to obtain information about treatment group implementation. They developed structured interviews (described below) for this purpose.

Site Visit: Interview with PTSD Group Coordinator/Leader (Zajac, 2004b). This structured interview was given to the primary group leader/coordinate. It assessed the following areas: (a) the degree to which group facilitators implemented the recommended logistics of the program (e.g., using soft lighting, playing soothing music, and posting group rules), (b) their level of education and experience, (c) the amount of education/information about groups imparted to other staff in the facility about PTSD and PTSD groups, (d) other forms of treatment activities provided for the females at the facility, (e) member selection and exclusion criteria, (f) group implementation (e.g., average number of members, duration, and frequency of sessions, changes made to the ARC PTSD Group Therapy Manual, the handling of problematic or symptomatic group members, the reporting of suspected child abuse, and the addressing cultural differences),
(g) coleader cooperation and debriefing, and (g) descriptions of ways in which ARC PTSD Groups had influenced the culture of the facility.

*Site Visit: Interview with PTSD Group Co-Leader (Zajac, 2004a).* This structured interview for cofacilitators assessed the following areas: (a) their education and experience, (b) their methods of group implementation (e.g., how they handle, members’ disclosure of abuse, traumatic reactions, problematic behaviors, and cultural differences and how they monitor and document individual and group progress, and debrief after each group, and (c) their impressions of how the group had changed the culture of the program.

*Site Visit: Interview with Supervisor (Zajac, 2004c).* This structured interview for supervisors assessed (a) supervisors’ level of education and degree(s), (b) how their program became involved in the PTSD project, (c) information about the selection of group participants (e.g., if supervisors have any part in the selection of group participants and the criteria that they follow for inclusion/exclusion), (d) information about the selection group facilitators, (e) the types of training that program staff who are not group facilitators receive, (f) the ways in which information about the PTSD groups is communicated to staff and how staff relay information about participants to group leaders, and (g) ways in which the PTSD groups have changed the culture of the program.

*Procedure*

*Recruitment*

Participants were recruited by the University of Pittsburgh researchers from residential facilities that had signed a letter of agreement to participate in the study and
had obtained a Federalwide Assurance number from the Department of Health and Human Services, Office for Human Research Protections. To compare persons who received the ARC PTSD Group treatment with those who had not, two types of agency sites were incorporated, treatment sites and comparison sites. Treatment sites included agencies that offered ARC PTSD Groups as part of their regular programming. Comparison sites consist of agencies that did not use this program, but provide other types of treatment.

*Procedures for Informing Subjects and Obtaining Consent/Assent*

In treatment sites facility staff trained by the University of Pittsburgh researchers described the evaluation and informed consent/assent to females who were eligible to participate in the study. This was done either individually or in similarly-aged groups in age-appropriate language. They distributed and read the informed consent to the females and explained the voluntary nature of the evaluation. Those females who chose to participate in the program signed consent or assent, depending on their ages. There were two methods of parental consent: (1) trained staff explained the evaluation and obtained informed consent during visitation days or (2) if parents/guardians did not visit, the University of Pittsburgh researchers mailed a letter of introduction and explanation with an informed consent form, contact information for questions, and a postage-paid card that parents could forward to the researchers if they wanted the researchers to contact them.

At comparison sites, the researchers invited all of the “delinquent” and “delinquent and dependent” females in the residence to participate in the evaluation study. The researchers meet with the females in similarly aged groups or individually to explain the evaluation and consent/assent. The females were able to ask questions of the
researchers at that time or in private for at least 1 hour after the meeting. After all questions had been answered, the females decided whether or not they wished to participate in the evaluation. Regardless of their decision, all of the females returned the signature pages to the facility staff member (whether signed or not). In this way it was not apparent to fellow residents which females had decided to participate and which had decided not to participate in the evaluation.

In treatment sites females who did not give consent/assent or whose parents did not consent were still able to participate in ARC PTSD Groups, which were regular components of their residential treatment programs. Thus treatment groups included both females who were part of the study and those who were not. Data was simply not collected by the researchers for those who were not participants in the research study.

Assignment of Subjects

Pennsylvania juvenile court judges who assigned females to treatment facilities and staff from participating agencies, not the researchers, determined those participants who were eligible to participate in the treatment groups. The researchers did not change the criteria for membership in the treatment groups so that they could evaluate the program as it was ordinarily conducted. To be included members were required to have a current, documented diagnosis of PTSD, according to DSM-IV (American Psychiatric Association, 2000) criteria or a history of trauma with at least one symptom of PTSD. The rationale for the selection of members was that not only persons with a full PTSD diagnosis, but also persons with a history of trauma and some symptoms might benefit from ARC PTSD Groups.
Information for membership selection was determined through review of records, evaluations by staff psychiatrists or psychologists, and the results participants’ responses to the ARC PTSD Interview (Alternative Rehabilitation Communities Inc., 2003a; see Appendix E). In addition, program staff examined potential group members’ capacity to tolerate and benefit from group treatment. Subjects who were actively suicidal or homicidal, psychotic, delusional, or mentally retarded, or who had severe personality disorders were excluded from the group.

In the comparison sites all females who were adjudicated delinquent were requested to take part in the study. In these sites the researchers assumed responsibility for the selection of subjects and for obtaining consent/assent of participants and consent of parents or guardians. Participants for whom appropriate consent/assent was obtained completed the Child and Adolescent PTSD Checklist (Amaya-Jackson et al., 1995). Those who met the diagnostic criteria for PTSD according to this instrument were included in the comparison group.

**Confidentiality and Protection of Participants**

Once informed consent was obtained, each participant was assigned a numerical identification code generated by the researchers. Only those identification codes were placed on instruments completed by participants and entered into the database. The University of Pittsburgh researchers alone had access to these codes and did not share them with anyone else, including residential staff or the researcher of the present study. Further, participants were given adequate space to complete all instruments, so that their responses could not be viewed by other participants.
Other Forms of Treatment

Participants both in the treatment and in the comparison sites resided in group homes in various agencies. Consequently, they also participated in the treatment programs offered by their various agencies. All received milieu therapy which varied, depending on the agency. Most treatments consisted of individual therapy, psychiatric care, behavior management, and other forms of group therapy, such as drug and alcohol, anger management, etc.
APPENDIX E

ARC PTSD Interview

1. Have you experienced or witnessed a life-threatening event that causes you to have intense fear, helplessness, or horror? Some examples might be physical, sexual, or emotional abuse; rape or date rape; witnessing domestic violence; being assaulted, which means being mugged, shot, stabbed, or held at gunpoint; being in a serious accident, fire, or earthquake; being tortured; having a life-threatening illness; being a prisoner; being in a war; or seeing any of these things happen to someone else.

(Discontinue the interview if this criterion is not met.)

2. How long ago did the event occur?

(Must be one month or more)

Reexperiencing Symptoms (Need 1 or more)

3. Does the memory of the event keep popping up in your mind? Yes No

4. Do you ever feel as if you were living through the event again? Yes No (Do you have flashbacks?)

5. Do you get very upset or have a strong physical reaction when you think about the event or are around persons, places, or things that remind you of it? For example, do you feel scared, angry, sad, or do you start to sweat, or does your hear beat fast, or your stomach feel sick?

Avoidance Symptoms (Need 3 or more)

6. Do you avoid thinking about or talking about the event? Yes No

7. Do you avoid places, activities, people, or things that remind you of it? Yes No

8. Do you ever go blank or not remember important parts of the event? Yes No

9. Do you lose interest in meaningful or important activities in your life? Yes No
10. Do you ever feel cut off or distant from other people? Yes No

11. Do you ever feel numb, as if you have no emotions and cannot cry or feel love? Yes No

12. Do you ever feel hopeless, as if you have no future? For example, you do not expect to have a career, a partner, children, or a normal life. Yes No

**Hyperarousal Symptoms (Need 2 or more)**

13. Do you have trouble falling asleep or staying asleep? Yes No

14. Do you have a lot of angry outbursts or feel irritable a lot? Yes No

15. Do you feel “on guard,” such as being very suspicious, or watching to see who is around you? Yes No

16. Do you feel jumpy or do you startle easily, such as when someone approaches you or touches you? Yes No

17. Do you have trouble concentrating, such as losing track of the plot during movies or TV programs, drifting in and out of conversations, or forgetting what you’ve read? Yes No

18. How long have you had any of the problems we talked about today? 

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**Interfering with functioning or causing marked distress (Need 1)**

19. Have these problems interfered with any part of your life, such as school, job, relationships with friends or family, romantic relationships, having fun, or being satisfied with life? Yes No

20. Have these problems caused you a lot of distress, concern, trouble, upset, grief, misery, or pain? Yes No
### APPENDIX F

Instruments and Their Related Variables and Constructs

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Variable</th>
<th>Construct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child and Adolescent PTSD Checklist (Amaya-Jackson et al., 1995)</td>
<td>PTSD diagnosis and severity</td>
<td>Severity of PTSD symptoms according to <em>DSM-IV</em> (American Psychiatric Association, 1994) criteria</td>
</tr>
<tr>
<td>How I Think Questionnaire (Barriga &amp; Gibbs, 1996)</td>
<td>Cognitive distortions and severity</td>
<td>Self-serving cognitive distortions in antisocial youth and their severity</td>
</tr>
<tr>
<td>In-Program Behavioral Assessment (Latessa, 2002)</td>
<td>Antisocial behavior in incarcerated antisocial youth</td>
<td>Behavioral change in antisocial youth living in a managed environment as a predictor of recidivism</td>
</tr>
<tr>
<td>Future Outlook Inventory (Cauffman &amp; Woolard, 1999)</td>
<td>Orientation toward the future</td>
<td>Orientation toward the future</td>
</tr>
<tr>
<td>PTSD Group Participant Survey (Puzzanchera &amp; Zajac, 2004a)</td>
<td>Client satisfaction, including degree of satisfaction</td>
<td>Does not measure a construct</td>
</tr>
</tbody>
</table>
APPENDIX G

Letter of Permission from Pennsylvania Commission on Crime and Delinquency

Commonwealth of Pennsylvania

PENNSYLVANIA COMMISSION ON CRIME AND DELINQUENCY

Walter M. Phillips, Jr., Esq.
Chairman

Carl J. Anderson, Esq.
Executive Director

October 12, 2004

Jane Heesen Knapp, MS, RPT-S
76 Country Lane
Landisville, Pennsylvania 17538

Dear Ms. Knapp:

Based on the assurances you provided in your September 27, 2004 letter, we approve of your secondary use of the data collected as part of the PTSD evaluation project being conducted by the University of Pittsburgh's Office of Child Development. It is our understanding that you will not have access to personally identifiable information for any of the participants. It is also our understanding that you will be publishing only summary data that cannot be used in combination with any publicly available data to personally identify any of the participants.

As you also noted in your letter, you have agreed to give PCCD the opportunity to review and comment on your doctoral thesis or any other publication arising from this secondary analysis. One of our goals at PCCD is to expand our knowledge on effective justice programs and policies. While we certainly expect that the initial evaluation project will accomplish that, we also hope your secondary analysis can contribute even more to that knowledge.

I look forward to reading your thesis and welcome your efforts to expand our justice knowledge.

Sincerely,

Doug Hoffman, Director
Center for Research, Evaluation, and Statistical Analysis

P.O. Box 1167, Harrisburg, PA 17108-1167
Toll-Free: (800) 692-7292
Web Site: www.pccd.state.pa.us
## APPENDIX H

Timeline for Data Collection by the University of Pittsburgh

<table>
<thead>
<tr>
<th></th>
<th>Pre-Group (week 1)</th>
<th>Mid-Group (week 8)</th>
<th>Post-Group (week 17)</th>
<th>1,3,6,8,75 Months Post Group (weeks 21,29,41,52) Completed as long as female is in the facility, not post discharge</th>
<th>Every 2 Months Post Discharge from Facilities (weeks vary for participants) until 52 weeks from the start of the study</th>
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<tbody>
<tr>
<td><strong>Treatment and Comparison Groups</strong></td>
<td>• PTSD Checklist</td>
<td>• PTSD Checklist</td>
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<td>• How I Think Questionnaire</td>
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<td></td>
<td>• Rosenberg’s Self-Esteem Scale</td>
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<td>• Nowicki and Strickland’s Locus of Control Scale</td>
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<td><strong>Groups Questionnaire</strong></td>
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<td></td>
<td><strong>Satisfaction Survey</strong> (treatment group only)</td>
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<td><strong>Satisfaction Survey</strong> (treatment group only)</td>
</tr>
<tr>
<td><strong>Probation Officers</strong></td>
<td>• Demographic information</td>
<td>• Clinical Contact Session Rating (completed every session)</td>
<td>• Clinical Contact Session Rating (completed every session)</td>
<td>• Clinical Contact Session Rating (completed every session)</td>
<td>• Probation Officer Survey</td>
</tr>
<tr>
<td><strong>Group Leaders</strong></td>
<td>• Clinical Contact Session Rating (completed every session)</td>
<td>• Clinical Contact Session Rating (completed every session)</td>
<td>• Clinical Contact Session Rating (completed every session)</td>
<td>• Clinical Contact Session Rating (completed every session)</td>
<td>• Clinical Contact Session Rating (completed every session)</td>
</tr>
<tr>
<td><strong>Facility Staff</strong></td>
<td>• Demographic information</td>
<td>• In-Program Behavioral Assessment</td>
<td>• In-Program Behavioral Assessment</td>
<td>• In-Program Behavioral Assessment</td>
<td>• In-Program Behavioral Assessment</td>
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