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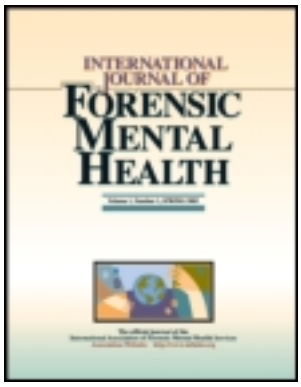

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Therapeutic Alliance in Justice-Involved Adolescents Undergoing Mental Health Treatment: The Role of Callous-Unemotional Traits

Tiffany P. Simpson [a] , Paul J. Frick [a] , Rachel E. Kahn [a] & Lisa J. Evans [b]
[a] Department of Psychology , University of New Orleans , New Orleans , Louisiana , USA
[b] Department of Psychiatry , University of Arkansas for Medical Sciences , Little Rock , Arkansas , USA
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Therapeutic Alliance in Justice-Involved Adolescents Undergoing Mental Health Treatment: The Role of Callous-Unemotional Traits

Tiffany P. Simpson, Paul J. Frick, and Rachel E. Kahn
Department of Psychology, University of New Orleans, New Orleans, Louisiana, USA
Lisa J. Evans
Department of Psychiatry, University of Arkansas for Medical Sciences, Little Rock, Arkansas, USA

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The current study tested factors that could influence both youth and therapist-reported therapeutic alliance in 58 male adolescents ranging in age from 15 to 18 years old ($M = 16.81$, $SD = 1.02$) who were adjudicated for a delinquent offense and identified as needing mental health treatment. Therapeutic alliance was assessed through self-report by both the adolescent and therapist. Callous-unemotional (CU) traits and antisocial history were assessed through self-report and official record review respectively. Results indicated that the number of previous offenses was negatively associated with adolescent-reported therapeutic alliance but this was qualified by an interaction between antisocial history and CU traits. In those low on CU traits, there was a negative but non-significant association between number of previous offenses and the quality of the therapeutic alliance, whereas the association was significant and positive for those high on CU traits. In addition, CU traits were associated with violent institutional infractions during treatment. Thus, the combination of high CU traits and a high number of previous offenses seemed to reflect a group of adolescents who reported more positive therapeutic alliances but still had violent institutional infractions. These results provide support for tailored interventions for youth high on CU traits which consider the quality of the therapeutic relationship.

Keywords: juvenile offending, callous-unemotional traits, therapeutic alliance, institutional infractions

Clinical research has suggested that therapeutic alliance is a robust predictor of positive therapeutic outcomes in the mental health treatment of both adults (Horvath & Bedi, 2002) and children/adolescents (Shirk & Karver, 2003). Therapeutic alliance is defined as the collaborative relationship between a client and therapist that can facilitate positive change (Florsheim et al., 2000). Therapeutic alliance consists of three interrelated components: *bonds* between the client and the therapist, the *tasks* associated with therapy, and consensus surrounding the short- and long-term *goals* of therapy (Horvath, 2000). Forming positive therapeutic alliances with children and adolescents may be difficult because they typically do not voluntarily initiate treatment and are often brought into treatment by a parent or caregiver (Bickman et al., 2004). Further, research has shown that an important pretreatment characteristic of therapeutic alliance is treatment motivation and perceived need for treatment (Orlando, Chan, & Morral, 2003). Thus, forming positive alliances may be particularly difficult for adolescents required to undergo treatment due to their involvement in the legal system.

While difficult to establish, there is evidence to suggest that the quality of the therapeutic alliance is important in the treatment of youths with antisocial behavior problems. For example, Kazdin, Marciano, and Whitley (2005) reported that more positive therapeutic alliances predicted greater therapeutic change, fewer perceived barriers to treatment, and greater treatment acceptability in children (ages 3–14) in a cognitive-behavioral treatment program for oppositional, aggressive, and antisocial behavior. Similarly, Florsheim et al.

Address correspondence to Paul J. Frick, Ph.D., Department of Psychology, University of New Orleans, 2001 Geology & Psychology Bldg., New Orleans, LA 70148. E-mail: pfrick@uno.edu

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(2000) reported that a positive therapeutic alliance was related to measures of institutional behavioral adjustment in a sample of male adolescents who were institutionalized for delinquent offenses. Importantly, these authors reported that this association was influenced by the length of time in treatment, with a positive working alliance only being associated with positive outcomes when it was assessed later in treatment.

Based on this research, it is critical to study and understand the factors that may impact the therapeutic alliance in antisocial youth and use this knowledge to enhance the treatment of this clinical population that has proven to be very difficult to treat (Frick, 2012). One important issue for understanding antisocial adolescents that could influence the formation of therapeutic alliances relates to the distinct causal pathways through which children and adolescents develop their antisocial and aggressive behaviors (Frick & Viding, 2009; Moffitt, 2006). For example, adolescents with the most severe and chronic patterns of antisocial behavior often show an early onset to their serious behavior problems (i.e., prior to the onset of adolescence; Moffitt et al., 2002). This serious and early onset group is more likely to show neuropsychological (e.g., deficits in executive functioning) and cognitive (e.g., low intelligence) deficits (Piquero, 2001; Raine et al., 2002), as well as more temperamental and personality risk factors, such as impulsivity (McCabe et al., 2001; Silverthorn, Frick, & Reynolds, 2001) and problems in emotional regulation (Moffitt et al., 1996). All of these problems could impact the ability of these youth to form therapeutic alliances in mental health treatment.

Importantly, recent research has suggested that within those antisocial youths who show a severe and early onset pattern of behavior, there are important differences between those who do and do not show high levels of callous-unemotional (CU) traits (e.g., lack of guilt and empathy; callous use of others for own gain) (see Frick & Viding, 2009; Frick & White, 2008, for reviews). Specifically, antisocial youth without CU traits often show more problems with hostile attributional biases (Frick et al., 2003), more problems regulating emotion (Frick & Morris, 2004), and lower verbal intelligence (Loney et al., 1998) than youth with high levels of CU traits. All of these factors mentioned above could make it more difficult for therapists to engage these adolescents in treatment. For example, hostile attributional biases may cause the youth to misinterpret the intentions of treatment providers and problems in emotional regulation could prevent the formation of positive engagement between these individuals and their therapists. Further, verbal deficits could influence the adolescent's understanding of the therapeutic goals and his or her ability to accomplish the required tasks.

Thus, those antisocial adolescents low on CU traits show many characteristics that could negatively influence the formation of a productive therapeutic alliance. Despite showing fewer factors that could interfere with the formation of the therapeutic alliance, youth with CU traits have shown poorer responses to treatment, lower rates of treatment participation, and lower rated quality of participation than those without these traits in both pre-adolescent (Hawes & Dadds, 2005) and adolescent samples (Falkenbach, Poythress, & Heide, 2003; Gretton et al., 2001; O'Neill, Lidz, & Heilbrun, 2003; Spain et al., 2004). For example, O'Neill and colleagues (2003) reported that adjudicated adolescents who scored high on a measure that included CU traits showed more attrition from treatment, less participation in treatment, and less clinical improvement in a substance abuse treatment program than those scoring lower on these traits.

Unfortunately, these studies showing poorer treatment progress in youths with higher levels of CU traits have not included measures of therapeutic alliance. Thus, there are several possible explanations for these results. Specifically, it is possible that adolescents with significant levels of CU traits have characteristics that also influence their formation of therapeutic alliance. For example, deficits in empathetic concern for others (Kimonis et al., 2008; Pardini, Lochman, & Frick, 2003) or deficits in interpreting emotional facial expressions in others (Blair et al., 2001; Dadds et al., 2006) could influence the youth's ability to form a close and positive relationship with the therapist. Alternatively, it is possible that adolescents with higher levels of CU traits are better able to form therapeutic alliances but the alliance may be less related to therapy outcome in these youth. For example, adults with psychopathic traits, which include CU traits, often are able to manipulate and exploit others and this may act as a barrier to treatment success (Salekin, Worley, & Grimes, 2010). Further, in some adult offender samples, more positive engagement in treatment has been associated with *increases* in recidivism after release for those high on psychopathic traits (Looman et al., 2005; Seto & Barbaree, 1999). As a result, it is possible that youth with CU traits, like adults with psychopathy, are able to form therapeutic alliances but they may be superficial and unrelated to positive treatment outcome.

Based on this research, we tested whether the severity of past antisocial behavior (i.e., number of previous offenses) was related to the quality of therapeutic alliance in a sample of adolescents who were adjudicated and incarcerated for serious delinquent behavior who were also undergoing mental health and substance abuse treatment. Further, we tested whether this association might be moderated by the level of CU traits. Based on prior research, we predicted therapeutic alliance would be negatively associated with severity of past antisocial behavior, but only in those low on CU traits. For youth high on CU traits we predicted either no relationship or a positive association between therapeutic alliance and severity of past antisocial behavior. In addition, we predicted that CU traits would moderate the association between therapeutic alliance and institutional behavioral adjustment (one potential indicator of treatment success). Specifically, we predicted that therapeutic alliance would be more strongly related to institutional behavioral

adjustment in those lower on CU traits. These hypotheses were tested using both therapist and adolescent ratings of the therapeutic alliance. This methodology is important given that these ratings have proven to be only moderately correlated in past studies and provide unique information in predicting treatment outcome (Kazdin et al., 2005). Also, the hypotheses were tested using a measure of institutional behavioral adjustment (i.e., violent institutional infractions coded from the youths case file) that was independent of either therapist or adolescent report. Finally, we controlled for length of time in treatment in all tests of the main study hypotheses, as suggested by past research (Florsheim et al., 2000).

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METHODS

Participants

Male adolescents who had been adjudicated for a delinquent offense were recruited from two participating state-run secure institutions in the southeastern United States. In addition, all participants were considered to be in need of mental health services as part of their court-ordered adjudication and the method for determining this need varied across jurisdictions. To be considered for the current study, the youth had to be (1) under 19 years of age, (2) have a Full Scale IQ of 70 or greater according to the Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999), (3) be participating in mental health services at their institution, and (4) to have been in the facility for at least thirty days. All eligible adolescents at the two facilities over the study period were invited to participate ($n = 66$). Forty-eight parents of adolescents under the age of 18 were contacted and 45 (94%) gave consent. Out of those 45, three youth (7%) were released or transferred before they could participate and two (4%) declined to give assent. Out of 21 eligible 18-year-old adolescents, 19 (90%) gave active consent. One participant was eliminated from the sample due to a failure to complete all of the measures.

Thus, the final sample consisted of 58 male adolescents between the ages of 15 and 18 ($M = 16.81$, $SD = 1.02$). The majority (67%) of the sample self-identified as African American, 28% identified themselves as Caucasian, 2% as Hispanic, and 2% as Native American. Based on self-report, 52% reported taking psychotropic medications and 28% reported placement in special education classes prior to adjudication. IQ scores in the present sample ranged from 71 to 111 ($M = 88.72$, $SD = 10.23$). Based on a review of their offense history from facility records, 55% of participants had been arrested at least once for a violent crime, 24 (43%) had been adjudicated for a violent offense for their current arrest, and the youth had an average of 2.58 total past offenses ($SD = 2.49$). The age of first arrest ranged from age 9 to 17 ($M = 13.76$, $SD = 1.71$).

Procedure

All procedures were approved by the host university's Institutional Review Board. All youth were adjudicated and under the legal guardianship of the state. Thus, a letter of consent for all youth's participation was provided by the head of the state Department of Juvenile Justice. In addition, active parental consent and active youth assent were obtained for all participants who were under the age of 18 and active consent was obtained from all youth over the age of 18. Parents of all youth under the age of 18 were contacted by telephone and provided with a description of the study along with its purpose and procedures. They were informed that their adolescent's participation in the project would in no way influence his treatment at the correctional facility or his legal standing in the adjudication process. Those parents who agreed to have their adolescent participate were then asked to have the consent process tape-recorded and were mailed a copy of the consent form for their records. Minor youth whose parents provided consent were approached individually at the detention facility by the researcher and provided a full description of the study and its procedures. Eighteen-year-olds were approached directly by the researcher to obtain active consent. All consent/assent and assessments were administered by a trained doctoral student.

All self-report questionnaires were read to youth in small groups (i.e., 3–5 participants) in a quiet and private room in the facility. After completing study measures, which took approximately 20 minutes, participants were given a snack. The therapist of each participating youth was then asked to complete the measure of therapeutic alliance. Finally, official adjudicated offenses, as well as the number and types of program infractions from the past 30 days, were coded from the institutional chart of each youth.

As noted previously, the adolescent had to have been in the facility for at least 30 days to be eligible for the study but the length of stay ranged from 43 to 1,464 days ($M = 281.17$, $SD = 258.68$). There were 21 therapists providing treatment and they included licensed social workers ($n = 14$), licensed professional counselors ($n = 5$), or licensed psychologists ($n = 2$). Each therapist had between one and seven clients participate in the study. The services provided to the youths involved one or both components of two treatment modalities: cognitive behavioral therapy and a combination of motivational interviewing and cannabis youth treatment (U.S. Department of Health and Human Services, 2001). Of the participants, the breakdown of treatment was as follows: cognitive behavioral therapy alone ($n = 29$), cannabis youth treatment alone ($n = 15$), and combination of both cognitive behavioral and cannabis youth treatments ($n = 14$). The present study exerted no control over the type of treatments adolescents received, given the need for the therapist to tailor treatments to the unique needs of each adolescent. Since mental health services typically began within the youths' first

two weeks in the institution, the length of time in the facility was used as a proxy for length of time in treatment.

Measures

Number of Prior Offenses

Severity of past antisocial behavior was measured using the number of previous convictions coded from the adolescent's official record at the institution. The official record is composed of court records detailing a chronological history of convictions. The number of previous offenses ranged from 0 to 12 ($M = 2.58$, $SD = 2.49$).

The Inventory of Callous-Unemotional Traits (ICU; Essau, Sasagawa, & Frick, 2006; Kimonis et al., 2008)

The ICU is a measure of CU traits that was developed using items from the Callous-Unemotional subscale of the Antisocial Process Screening Device (APSD; Frick & Hare, 2001), which is a widely used scale to assess these traits in children and adolescents. However, the self-report CU subscale from the APSD has demonstrated only moderate internal consistency in past studies (e.g., Loney et al. 2003; Pardini et al., 2003), which is likely due to its small number of items ($n = 6$) and three-point rating system. The ICU was designed to overcome these psychometric limitations by expanding the four items from the APSD CU subscale that loaded consistently on this factor in clinic and community samples (Frick, Bodin, & Barry, 2000) to each include three similar positively worded items and three similar negatively worded items. These 24 items were then placed on a four-point Likert scale from 0 (Not at all true) to 3 (Definitely true).

The construct validity of the ICU was supported in a large community sample ($n = 1{,}443$) of 13- to 18-year-old non-referred German adolescents (Essau et al., 2006), as well as an American sample ($n = 248$) of juvenile offenders between the ages of 12 and 20 (Kimonis et al., 2008). In both samples, the total scale showed adequate internal consistency (α of .77 and .81) and expected associations with aggression, delinquency, personality traits (e.g., sensation seeking, Big Five dimensions), emotional reactivity, and psychosocial impairment. In the current sample, the internal consistency for this measure was .83.

The Working Alliance Inventory (WAI; Horvath & Greenberg, 1989, 1994)

The WAI was used to assess the quality of the therapeutic relationship between the youth and his mental health therapist. The WAI is a 36-item questionnaire completed by both the client (WAI-C) and therapist (WAI-T) that consists of three subscales designed to assess the three primary components of the working alliance: (1) *Goals*: how well clients and therapists agree on and are mutually invested in the goals of treatment, (2) *Tasks:* whether the client and therapist agree on how to reach the treatment goals, and (3) *Bonds:* the degree of mutual trust, acceptance, and confidence between the client and therapist. For the purposes of this study, the three subscales of the WAI were used individually and were also combined, to create a global measure of therapeutic alliance. This was done for two reasons. First, the intercorrelations among the WAI subscales ranged from .75–.89 across therapist and client ratings and the correlations between subscales and the total score ranged from .91–.97. Further, prior factor analysis provides support for a bi-factor model consisting of three subscales that load onto a general therapeutic alliance factor (Tracey & Kokotovic, 1989). The WAI has been widely used in research on the psychotherapeutic process in samples of adolescents, including justice involved adolescents (Florsheim et al., 2000) and the psychometric properties of the WAI have been described extensively in previous work (Horvath & Greenberg, 1989; Horvath & Luborsky, 1993). The WAI is also strongly correlated with other measures of therapeutic alliance (Horvath & Greenberg, 1989). In this sample, the internal consistency for the WAI total scores were .95 and .96 for the client and therapist rated versions, respectively. The alphas of the individual subscales ranged from .83 to .93 for the client version and from .88 to .92 for the therapist version.

Institutional Behavioral Adjustment

The number and types of Accident and Incident (A & I) reports accumulated throughout the previous month prior to completing the questionnaires were extracted from the chart of each youth and used to measure institutional behavioral adjustment. The A & I reports were completed each time an accident or injury occurs and the youth is sent to the infirmary. These reports are completed by the institution staff and not by the adolescent's therapist. Further, these reports require very little interpretation from the staff and, thus, provide one of the more objective measures of the adolescents' institutional adjustment. For this study, only the number of violent A & I reports were used and these included youth on youth altercations, youth on staff altercations, use of force, and sexual assault. The number of violent A & I reports made over the past month was highly skewed and ranged from 0 to 3 ($M = .83$; $SD = .99$). Thus, this variable was converted into a dichotomous variable based on whether the participant had been involved in any violent incident over the preceding month. Forty-eight percent of the sample had at least one violent A & I report in the preceding month.

Data Analysis

The three treatment groups in this study were collapsed for all analyses. There was no difference between youths in the three treatment designations on level of CU traits ($F\,(2, 54) = 0.21, p = .82$), client ($F\,(2, 52) = 0.91, p = .41$) or therapist ($F\,(2, 47) = 0.85, p = .43$) rated therapeutic alliance, or number of previous offenses ($F\,(2, 52) = 3.69$, $p = .56$). However,

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youth in the treatment designations did differ on presence of a violent A & I report, with the combined treatment group being significantly more likely to have a violent A & I report ($\chi^2(2) = 7.04$, $p < .05$).

Data were analyzed using SPSS 19. Hierarchical regression analyses were used for the outcomes of client and therapist rated therapeutic alliance (Total, Bonds, Goals, and Tasks). Specifically, in the first step, CU traits, number of previous offenses, and length of time in treatment were entered as predictors. In the next step, a multiplicative interaction term for CU traits and number of past offenses was added. This interaction term used variables centered using the sample mean. The significance of the interaction was tested by testing the change in R^2 due to the addition of the interaction term. Finally, analogous hierarchical logistic regressions were conducted for the binary outcome of presence of a violent A & I report.

RESULTS

Table 1 provides the distribution of study variables and partial correlations among the main study variables after controlling for length of time in treatment. Several significant correlations emerged. First, IQ was generally not associated with any of the study variables, with the exception of a positive association with the Goals subscale of the WAI-C. Second, there was a significant relationship between ICU scores and number of previous offenses. Third, and consistent with hypotheses, number of previous offenses was negatively correlated with adolescent-reported therapeutic alliance, and this was due largely to the Bonds and Goals scales of the WAI-C. However, number of previous offenses was not significantly associated with therapist ratings of therapeutic alliance, and in fact, showed non-significant positive correlations. Fourth, ICU scores were not significantly associated with any of the therapeutic alliance scores, although the correlations were in the same direction as those for offense history.

The next set of analyses involved hierarchical regression analyses testing the interaction between number of previous offenses and ICU scores for predicting therapeutic alliance scores. As shown in Table 2, for the adolescent report of therapeutic alliance there was a significant interaction between the ICU and number of previous offenses accounting for an additional 8% of the variance in the alliance measure for the total scale and an additional 11% of the variance for the Goals subscale. The significant interactions were explored using the procedure recommended by Holmbeck (2002). In this procedure, the regression equation from the full sample is used to calculate predicted values of the dependent variable (i.e., WAI-C total score), at high (one SD above the mean) and low levels (one SD below the mean) of the two predictors (i.e., CU traits and number of previous offenses). Post hoc probing was used to determine whether the association between number of previous offenses and the WAI-C total score was significant at either of the two levels of CU traits by computing the simple slopes (i.e., standardized beta) and testing these for significance (Holmbeck, 2002). The results of these analyses are summarized in Figure 1. As shown in this figure, there was a non-significant negative association between number of previous offenses and adolescent reported therapeutic alliance at low levels of CU traits ($\beta = -.23$,

TABLE 1
Descriptive Statistics and Partial Correlations among Main Study Variables Controlling for Number of Days in Treatment

	M/%	*SD/N*	IQ	#Offenses	ICU	WAI-C Total	WAI-C Bonds	WAI-C Tasks	WAI-C Goals	WAI-T Total	WAI-T Bonds	WAI-T Tasks	WAI-T Goals
IQ	88.72	10.23											
#Offenses	2.58	2.49	−.14										
ICU	28.34	9.79	−.01	.32*									
WAI-C Total	199.66	43.63	.27	−.26[a]	−.19								
WAI-C-Bonds	65.95	15.30	.19	−.28*	−.18	.95**							
WAI-C-Tasks	68.29	16.48	.26	−.20	−.14	.96**	.85**						
WAI-C-Goals	65.43	14.06	.30*	−.28*	−.25[b]	.95**	.84**	.87**					
WAI-T Total	181.28	37.35	.04	.21	.10	.28*	.30*	.22	.28[a]				
WAI-T-Bonds	63.40	12.19	.02	.13	.07	.22	.28*	.14	.23	.91**			
WAI-T-Tasks	60.52	13.60	.11	.19	.08	.31*	.31*	.25	.32*	.93**	.75**		
WAI-T-Goals	57.08	13.71	.03	.27[b]	.13	.29*	.30*	.24	.27[b]	.97**	.84**	.89**	
Violent A & I	48%	*N* = 28	−.16	−.12	.21	.08	.09	.14	−.02	−.02	−.03	.01	−.06

Note: #Offenses = The Number of Previous Offenses; ICU = The Inventory of Callous-Unemotional Traits; WAI-C = The Working Alliance Inventory-Client Version Total (Horvath & Greenberg, 1989); WAI-C-Bonds = The Working Alliance Inventory-Client Version, Bonds Subscale; WAI-C-Tasks = The Working Alliance Inventory - Client Version, Tasks Subscale); WAI-C-Goals = The Working Alliance Inventory-Client Version, Goals Subscale); WAI-T = The Working Alliance Inventory-Therapist Version Total (Horvath & Greenberg, 1989); WAI-T-Bonds = The Working Alliance Inventory-Therapist Version, Bonds Subscale; WAI-T-Tasks = The Working Alliance Inventory-Therapist Version, Tasks Subscale; WAI-T-Goals = The Working Alliance Inventory-Therapist Version, Goals Subscale; Violent A & I-Presence of a violent Accident and Incident.

*$p < .05$; **$p < .01$; [a]$p < .06$; [b]$p < .07$.

TABLE 2
Hierarchical Regression Analyses with Callous-Unemotional Traits and Number of Previous Offenses as Predictors of Adolescent and Therapist Reported Therapeutic Alliance after Controlling for Length of Time in Treatment

	Client Self-Report Therapeutic Alliance											
	WAI-C Total Score			WAI-C Bonds			WAI-C Tasks			WAI-C Goals		
	β	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2
Predictors												
ICU	−.13			−.12			−.08			−.18		
#Offenses	.22			.24			.17			.22		
Time in Tx	.12			.09			.12			.14		
		.10			.10			.06			.13	
ICU	−.20			−.17			−.15			−.26		
#Offenses	.02			.07			−.01			−.01		
Time in Tx	.14			.11			.14			.15		
ICU x #Offenses	.34*			.29			.30			.39*		
		.18	.08*		.16	.06		.13	.06		.23	.11*
	Therapist Reported Therapeutic Alliance											
	WAI-T Total Score			WAI-T Bonds			WAI-T Tasks			WAI-T Goals		
	β	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2
Predictors												
ICU	.03			.04			.01			.06		
#Offenses	−.20			−.12			−.18			−.25		
Time in Tx	.23			.22			.18			.21		
		.09			.06			.06			.10	
ICU	.03			.02			.01			.06		
#Offenses	−.21			−.15			−.17			−.25		
Time in Tx	.23			.22			.18			.21		
ICU x #Offenses	−.02			.09			−.04			−.01		
		.09	.00		.07	.01		.06	.00		.10	.00

Note: ICU = The Inventory of Callous-Unemotional Traits; #Offenses = The Number of Previous Offenses; WAI-C = The Working Alliance Inventory - Client Version; WAI-T = The Working Alliance Inventory - Therapist Version; All predictors were centered using the sample means prior to entering them into the regression analyses.

*$p < .05$.

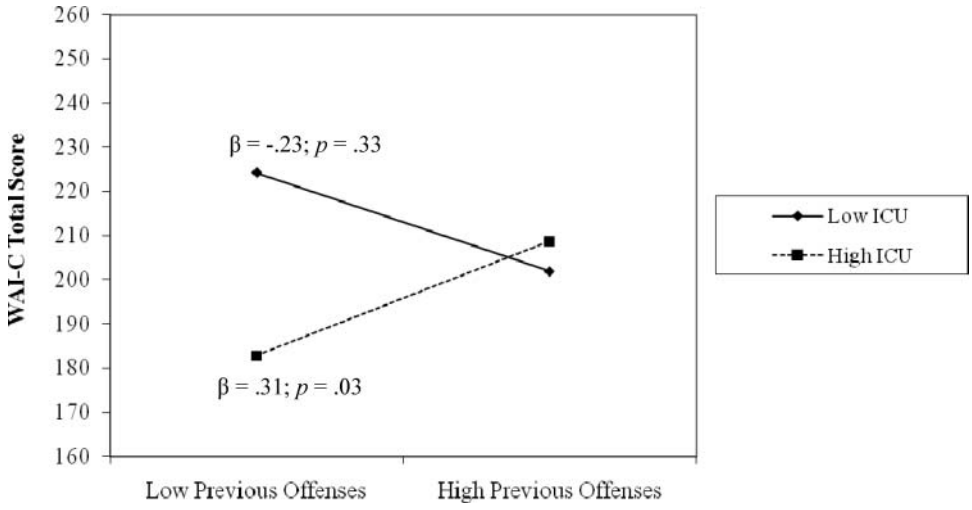

FIGURE 1 Simple slopes illustrating the interaction between callous-unemotional traits and number of previous offenses predicting adolescent reported therapeutic alliance.

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TABLE 3
Logistic Regression Analyses Testing Callous-Unemotional Traits and Therapeutic Alliance as Predictors of Violent Institutional Infractions after Controlling for Length of Time in Treatment

	Violent A & I Score Odds Ratio
Client Therapeutic Alliance	
ICU	1.05
Total WAI-C	.99
Time in Tx	1.00
ICU x WAI-C	1.01
Therapist Therapeutic Alliance	
ICU	1.08*
Total WAI-T	1.00
Time in Tx	1.00
ICU x WAI-T	1.07

Note: ICU = The Inventory of Callous-Unemotional Traits; WAI-C = The Working Alliance Inventory-Client Version; WAI-T = The Working Alliance Inventory-Therapist Version; Violent A & I score = Presence of a violent Accident and Incident; All predictors were centered using the sample means prior to entering them into the regression analyses.
*$p < .05$.

$p = .33$). However, there was a significant positive association between number of previous offenses and the WAI-C total score at high levels of CU traits ($\beta = .31$, $p = .03$). The form of the interaction was the same for the Goals subscale, although those results are not reported in the figure.

Similar hierarchical regression analyses were conducted for the therapist's ratings of therapeutic alliance and these analyses are also reported in Table 2. In these analyses, none of the interactions between ICU scores and number of previous offenses were significant and the interactions accounted for between 0 and 1% of the variance in the therapeutic alliance measures.

The final set of analyses addressed the hypothesis that CU traits would moderate the association between therapeutic alliance scores and institutional behavioral adjustment after controlling for length of time in treatment. This was tested in logistic regression analyses predicting the odds of having a violent A & I report. As shown in Table 3, level of CU traits was a significant predictor of the likelihood of any violent A & I report (Odds Ratio = 1.08, $p = .04$) but this was not qualified by a significant interaction with the quality of therapeutic alliance by either therapist or adolescent report. Similar results were obtained when the subscales of the WAI-C and WAI-T were used in analyses.

DISCUSSION

The current study tested factors that could influence the quality of the therapeutic alliance in institutionalized adolescents who were receiving mental health treatment. Importantly, this study focused on two factors that have been important in recent developmental models of antisocial behavior; namely, severity of past antisocial history that is a marker of an early-onset pattern of antisocial behavior and the presence of CU traits (Frick & Viding, 2009; Moffitt, 2006). Overall, the number of previous offenses was negatively associated with adolescent-reported therapeutic alliance but this was qualified by an interaction between antisocial history and level of CU traits. As shown in Figure 1, number of previous offenses was negatively related to adolescent reported therapeutic alliance in those low on CU traits, but this association was non-significant. Conversely, in those high on CU traits, there was a significant positive relationship between number of previous offenses and the quality of the therapeutic alliance.

We interpret these results as being consistent with the distinct characteristics of different subgroups of antisocial youth. Specifically, in youth without CU traits, those with less severe levels of antisocial behavior are more likely to have an adolescent-onset to their antisocial behavior and such youths tend to have less severe dispositional vulnerabilities that are likely to interfere with the formation of positive therapeutic relationship (Dandreaux & Frick, 2009; Moffitt, 2006). In contrast, those without CU traits but with more severe antisocial histories are more likely to have cognitive impairments (e.g., verbal deficits) and temperamental vulnerabilities (e.g., problems in emotional regulation) that may interfere with the formation of the therapeutic alliance (Dandreaux & Frick, 2009; Moffitt et al., 1996). Based on these findings, it will be important for future research to test which of the various dispositional vulnerabilities most strongly relate to the problems in establishing the therapeutic alliance in this group of adolescent offenders.

Importantly, this interpretation needs be made cautiously, given that age of onset was not used in analyses. This methodology was used because the only onset measure available was from official records which may miss early severe antisocial behavior that may not be formally processed (Elliott, 1994; Moffitt, 2006). As a result, using a measure of severity of past offending as a marker for early age of onset was viewed as more preferable. Further, we chose to operationalize severity of antisocial behavior as number of previous offenses, rather than defining severity by the presence of a prior violent offense. We chose this variable, because it allows for the use of a continuous measure with greater range to enhance prediction. However, when analyses were repeated using a dichotomized variable (presence of a violent prior offense v. no prior history of violent offenses), the results did not change substantively.

In our participants high on CU traits, the number of previous offenses showed the opposite association with youth reported therapeutic alliance (i.e., was associated with better therapeutic alliance scores). This pattern of associations was consistent with our predictions that youth high on CU traits, like adults with psychopathic traits, may be more socially skilled than other juvenile offenders and be able to establish

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positive therapeutic alliances but in a way that is superficial and manipulative. It is difficult to objectively assess the "superficial and manipulative" nature of this relationship. Also, our results did not support our predictions that CU traits would interact with the measure of therapeutic alliance in predicting violent institutional infractions. However, CU traits were moderately associated with violent infractions and the level of association was similar to what was found in a meta-analysis of 15 studies ($N = 1310$) of the association of psychopathic traits (which include CU traits) and institutional infractions (Edens & Campbell, 2007). Specifically, Edens and Campbell (2007) reported that the average association across the studies included in the meta-analysis between psychopathic traits and institutional infractions in general was $r = .24$ and with violent infractions was $r = .28$, which are consistent with the correlation between CU traits and violent infractions ($r = .21$) found in the current study.

These results also need to be interpreted in light of the fact that the interaction between CU traits and previous offenses was not found for the therapist reported quality of therapeutic alliance. One possible explanation is that therapists were able to detect manipulative attempts by youth with CU traits to appear to be involved and motivated in therapy. However, the correlations between CU traits and ratings of therapeutic alliance were not consistent with this explanation. That is, the association between CU traits and therapists ratings of alliance were positive ($r = .10$), albeit non-significant, after controlling for length of time in treatment. Thus, the association between these traits and the quality of therapeutic alliance requires further research but these findings do alert mental health professionals to the possibility that youth with these traits may report higher levels of therapeutic alliance, despite still being at risk for significant problems in institutional adjustment.

All of these findings should be interpreted in the context of several limitations. First, the sample was representative of the adolescents in the two institutions receiving mental health treatment. However, the size of the sample was relatively small which may have resulted in a lack of statistical power to detect some significant associations, especially interaction effects. In addition, it is important to note that it is not clear how representative of institutionalized adolescents this sample was, given that they were all judged to be in need of mental health treatment and this designation varied by jurisdiction. Further, diagnostic information was not available for the sample to clearly document the types and severity of the participants' mental health problems. Future studies should more fully explore how symptoms of mental illness may affect levels of therapeutic alliance. This research would be especially important given our finding that youth with comorbid substance and mental health symptoms (i.e., those designated to the combined treatment group) had significantly more violent A & I reports than youth in the other two treatment groups. This suggests that aggressive or violent behavior in the institution may be especially important to target for those youth with comorbid substance and mental health symptoms.

Second, the type of treatment the adolescent received was not controlled in the current study, which increases the ecological validity of the results because it allowed therapists to tailor how the treatment was implemented for each adolescent which is standard practice in most juvenile forensic facilities (Desai et al., 2006). However, future studies should include some method for monitoring and documenting the types of interventions used to determine if this influences the quality of the therapeutic alliance. In addition, the current study did not assess the adolescent's experience in prior treatment settings and thus, it is possible that this experience (positive or negative) may have affected their current ratings of therapeutic alliance. Third, the primary focus of the study was on predicting the measures of therapeutic alliance. However, the results related to treatment outcome were limited by the focus on only violent infractions as the indicator of institutional behavioral adjustment. Importantly, this indicator was chosen because it did not rely on either therapist or adolescent report, which increased its independence from the ratings of therapeutic alliance. However, use of other indicators of success both in the institution (e.g., more general behavioral improvement) and outside the institution (e.g., reductions in recidivism) would have strengthened the findings. Finally, the current study is cross-sectional in nature and this makes it impossible to make causal interpretations for the associations documented in the current study.

While the implications of this study need to be considered in light of these limitations, they do support research suggesting that treatment of antisocial youth needs to consider the different pathways through which youth develop their antisocial behavior in designing appropriate treatments. Heretofore, these recommendations have focused largely on the different focus of the intervention for youth in the adolescent-onset group (e.g., on identity development and associations with positive peer groups), for those in the childhood-onset group without CU traits (e.g., on improving emotional regulation skills) and for those high on CU traits (e.g., on empathy training and use of appropriate motivational strategies) (Frick, 2012). Our results also suggest that these pathways may influence the therapeutic relationship in which these treatments take place as well. Further, our results support a significant amount of past research suggesting that antisocial youths with CU traits are a group that shows a particularly severe pattern of antisocial behavior both outside (e.g., number of previous offenses) and inside (e.g., number of violent infractions) institutions (Edens, Campbell, & Weir, 2007; Frick & Dickens, 2006; Leistico et al., 2008). There is evidence to suggest that such youths are not untreatable, but that treatment needs to be tailored to their unique emotional, cognitive, and personality characteristics (Caldwell et al., 2006; Kolko et al., 2009). Our results suggest that such interventions also need to consider the influence of these traits on the relationship between the therapist and adolescent.

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