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RESEARCH ON RISK FACTORS AND SECONDARY TRAUMA

Juvenile Offender Recidivism: An Examination of Risk Factors

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One hundred and seventy three male juvenile offenders were followed two years postrelease from a residential treatment facility to assess recidivism and factors related to recidivism. The overall recidivism rate was 23.9%. Logistic regression with stepwise and backward variable selection methods was used to examine the relationship between recidivism and nine specific variables: offense type, age at initial involvement in juvenile justice, child welfare system involvement, termination of parental rights, parental criminal history, family support, program completion status, length of treatment stay, and discharge placement. Offender type was the only factor found to have a significant impact on recidivism with general and substance-involved offenders more likely to recidivate than sex offenders. Implications for future research are discussed.

KEYWORDS delinquency, criminal involvement, adolescence, youth, re-offense, juvenile justice, residential treatment

The primary objective of the juvenile justice system has always been rehabilitation; however, recidivism rates for juvenile offenders following treatment have raised serious concern as to whether the system is able to accomplish

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this objective. In fact, recidivism rates for juvenile offenders following residential treatment have ranged from 40.16% (Taylor, Kemper, Loney, & Kistner, 2009) to 65.2% (Benda, Corwyn, & Toombs, 2001) to 85% (Trulson, Marquart, Mullings, & Caeti, 2005). Because residential treatment is typically reserved for the most serious offenders, these high rates of recidivism could be somewhat expected. Nonetheless, they are of grave concern. More important, it is precisely because this subgroup of juvenile offenders—those receiving residential treatment—is at greatest risk of reoffending that we must focus outcomes research specifically on them. And in so doing, we must be able to identify, understand, and target the variables associated with recidivism (Minor, Wells, & Angel, 2008) so that we may be able to effectively reduce recidivism. This study was developed for these reasons. More specifically, this study was designed to evaluate recidivism following residential treatment for a group of juvenile offenders and to examine the role of various factors in recidivism. To accomplish this, a two-year follow-up evaluation was conducted and nine previously identified risk factors were examined.

REVIEW OF THE LITERATURE

A small group of most recent studies of recidivism among juvenile offenders have begun to focus on the specialized population of offenders that have been placed in residential treatment programs (Caldwell & Dickinson, 2009; Douglas, Epstein, & Poythress, 2008; Hendriks & Bijleveld, 2008; Minor et al., 2008; Mulder, Brand, Bullens, & Van Marle, 2010; Taylor et al., 2009). Four of these studies included juvenile offenders adjudicated on various charges, whereas two focused specifically on juveniles adjudicated on sex offenses. The sample sizes in these studies ranged from 83 to 1,154, the length of incarceration ranged from 6 months to 4 years, and the length of follow-up ranged from 7 months to 9 years. The key feature that each of these studies shared was an examination of risk factors that contribute to recidivism among these more severe juvenile offenders.

The most recent study involving the use of a classification system to predict recidivism was conducted by Taylor and colleagues (2009). To accomplish this, a previously devised classification system (Taylor, Kemper, Loney, & Kistner, 2006) based on the personality and clinical scales from the Millon Adolescent Clinical Inventory (MACI; Millon, 1993) was used and resulted in the identification of five subgroups: anxious/inhibited, impulsive/reactive, psychopathy, conforming, and unremarkable (i.e., little elevation on any clinical or personality scale). A total of 1,015 male juvenile offenders from one residential facility were included in the study. Recidivism data were collected at various points, ranging from 7 months to 8.9 years. The recidivism rate for the entire sample was 40.16%. Consistent with the

researchers' hypotheses, offenders in the psychopathy group had the highest rate of recidivism at 48.6%. This was followed by the impulsive/reactive group with a rate of 42.2% while the anxious/inhibited group was the least likely to recidivate at 27.3%, thus suggesting some degree of support for such a classification system in predicting recidivism.

In another attempt at classification, the Juvenile Forensic Profile (JFP; Brand & van Heerde, 2004), a 70-item risk assessment tool consisting of both dynamic and static factors, was used to assess risk in 1,154 juvenile offenders treated in a Dutch residential facility (Mulder et al., 2010). Risk factors such as offense history, problem behavior, and family involvement were explored. Youth involved in this study were incarcerated from 2 to 4 years and follow-up was conducted between 2 to 5.8 years post-release. The overall recidivism rate for this population was 79.9%. Factors that were found to be predictive of recidivism included a more extensive and serious offense history, lack of empathy and/or conscience, antisocial behavior during treatment, and family problems.

In yet another study focused on the use of standardized assessment instruments in the prediction of recidivism, Douglass and colleagues (2008) assessed 83 juvenile offenders with the Psychopathy Checklist: Youth Version (PCL: YV; Hare, 2003), the Antisocial Process Screening Device (APSD; Frick & Hare, 2001), and the Childhood Psychopathy Scale (CPS; Lynam et al., 2005). Forty-two of the offenders were placed in a sex offender treatment program while the remaining 43 offenders were placed in a treatment program for general, non–sex offenders. Length of stay for the offenders ranged from 186–1,110 days, and follow-up occurred between approximately 10 months to 3 years postrelease. This study differed from the previous two in that the type of recidivism was also assessed, including violent, nonviolent, and the use of weapons. A total of 179 new crimes were committed, with approximately half committed by 10% of the population. Unfortunately, the exact number of recidivists was not reported in this study. With regard to the predictive validity of the instruments, the CPS was related to most types of recidivism in comparison to the APSD and the PCL: YV; however, when relevant covariates (e.g., age, substance use) were included in the multivariate analysis, any previously found predictive effects disappeared. These results are particularly interesting since they were not consistent with previous findings that supported the predictive validity of these instruments (Gretton, Hare, & Catchpole, 2004).

In the only study that included both male and female juvenile offenders, 580 offenders were followed 18 months post-release from a residential treatment facility (Minor et al., 2008). Using a logistic regression, 33 variables were examined as potential risk factors that included such issues as mental health history, prior adjudications, and substance abuse history. In terms of overall recidivism, 52.2% of the offenders reoffended within the 18 month follow-up period. Gender was a strong predictor of recidivism with males

being two times more likely to recidivate than females. Only four variables were related to recidivism when both males and females were analyzed together: victimization history, age, gender, and special education needs. However, when separate models were used for the two gender groups, only previous out-of-home placements were predictive of female recidivism. Interestingly, while the probability of recidivism was greater among offenders with abandonment history, youth with a sexual abuse history were 44.6 less likely to reoffend than those without a sexual abuse history.

In a long-term follow-up study specifically evaluating recidivism of juvenile sex offenders, Hendriks and Bijleveld (2008) examined 114 youth treated for an average of 28 months in a residential facility. The group was followed a median of 9 years, and the overall recidivism rate was 70%. However, 30% of those that reoffended did so within a year of discharge while 50% reoffended within 2 years, and by 3 years all but one offender had reoffended of those who eventually recidivated. Differentiating the major types of reoffenses, 11% sexually reoffended while 7% committed violent offenses, 21% property offenses, and 2% drug offenses. The remaining offenses occurred in a variety of categories. Several assessment instruments including the Juvenile Sex Offender Checklist (Hendriks & Bijleveld, 2004), the Juvenile Sex Offender Assessment Protocol (Prentky, Harris, Frizzel, & Righthand, 2000), the Estimate of Risk of Adolescent Sex Offender Recidivism (ERASOR; Worling & Curwen, 2001), the Amsterdam Biographical Questionnaire for Children (as cited in Hendriks & Bijleveld, 2008), the Adolescent Temperament List (as cited in Hendriks & Bijleveld, 2008), the Wechsler Intelligence Scale for Children–Fourth Edition (WISC-IV; Wechsler, 2003) revised for the Netherlands, and the Dutch Personality Questionnaire–Youth (as cited in Hendriks & Bijleveld, 2008) were used either in whole or in part in assessment activities that involved a review of case files to score the assessment tools. In an attempt to identify the factors associated with sexual recidivism, none of the factors such as previous sexual offenses and previous sexual interest, social isolation, impulsiveness, and deviant sexual interest—variables previously identified as risk factors by Miner (2002) and Worling (2002)—were found to be significant. Although no variables were found to significantly predict sexual recidivism, significant differences did emerge between violent and nonviolent reoffenders. Violent reoffenders had been bullied less, neglected more often, had better peer relations, had less incidence of sexual abuse, were older, and had received shorter treatment than their nonviolent counterparts.

In the other study focused on recidivism among juvenile sex offenders, 172 youth were followed for a mean of approximately five years (Caldwell & Dickinson, 2009). In terms of recidivism, 59.3% committed a new offense, 12.2% of which were sexual offenses. The Juvenile Sex Offender Assessment Protocol-Second Edition (J-SOAP-II; Prentky & Righthand, 2003) and the Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge &

Andrews, 1994) were used to analyze various factors associated with recidivism and to determine the predictive validity of the tools. The J-SOAP-II Impulsive/Antisocial Behavior scale significantly predicted recidivism and the YLS/CMI predicted each type of recidivism except violent sexual offense charges.

Although this most recent body of research on adolescent offender recidivism following residential treatment is small, several aspects have been explored. Specifically, the studies to date have involved follow-up at a wide range of time frames, evaluated specialized subgroups of offenders as a distinct group as well as part of a broader group of offenders, and have analyzed a broad number of risk factors. In addition, some of these studies have included standardized, established assessment tools (e.g., J-SOAP II, Psychopathy Checklist).

The breadth of risk factors evaluated previously reflects the diversity of research conducted in this area and includes offense history (Caldwell & Dickinson, 2009; Hendriks & Bijleveld, 2008; Mulder et al., 2010), family involvement (Mulder et al., 2010), substance use (Douglass et al., 2008; Minor et al., 2008), history of abuse and/or neglect (Minor et al., 2008), and specialized subgroups of offenders (Caldwell & Dickinson, 2009; Hendriks & Bijleveld, 2008). In addition, all of the studies examined the length of residential treatment stay. Two factors not examined in the previous review but factors that have also been linked to reoffense risk are parental criminal history (Smith & Farrington, 2004; Van de Rakt, Nieuwbeerta, & Apel, 2009; Van de Rakt, Nieuwbeerta, & de Graaf, 2008) and treatment completion (Best et al., 2008; Forgays, 2008; Hollin & Palmer, 2009).

More than a decade ago, Farrington, Barnes, and Lambert (1996) identified that a small number of families was responsible for a majority of all crimes committed. Since that time, additional research has continued to show significant correlations between parental criminal history and the delinquent behavior of their offspring. Findings specifically related to the father's criminal history have included a direct effect on his children's delinquent behaviors (Thornberry, Freeman-Gallant, Lizotte, Krohn, & Smith, 2003) as well as a correlation of delinquency specifically among male children (Farrington, Jolliffe, Loeber, Stouthamer-Loeber, & Kalb, 2001). A more recent study conducted on intergenerational offending also found a correlation; however, there were no significant differences of risk between male and female offspring (Van de Rakt et al., 2009). In addition, no significant differences were found between the degree of influence of mother and father on the risk of child delinquency but rather the conviction of either parent was found to double the likelihood of a child's delinquency.

Turning to the risk associated with treatment program completion among offenders, findings have revealed a relationship between treatment completion and lower rates of recidivism (Hollin & Palmer, 2009; McMurran & Theodosi, 2007). In one of the largest and most recent reviews

examining program completion status and reoffense, noncompleters were found to be more likely to reoffend than those who had completed treatment (McMurran & Theodosi, 2007). This review is also of particular interest because the 16 treatment programs were provided to a specialized group of offenders—those with substance abuse issues.

The research to date does reflect a growing interest in understanding recidivism among the specialized population of juvenile offenders that have participated in residential treatment; however, there is a need for much more work in this area. The primary purpose of this study was to build on these findings, using past research efforts to guide the study parameters. To accomplish this, eight of the previously established risk factors were examined that included: offense type (offense history), age at initial involvement in juvenile justice (offense history), child welfare system involvement (history of abuse and/or neglect), termination of parental rights (history of abuse and/or neglect), parental criminal history, family support (family involvement), program completion status, and length of treatment stay. In addition, discharge placement was examined because of the current emphasis on reentry planning for juvenile offenders and the role that discharge placement has in reentry. A two-year follow-up was conducted to evaluate recidivism following residential treatment among two specialized groups of offenders (sex offender and substance-using offender) as well as one group of general offenders.

METHOD

Participants

There were a total of 166 participants involved in this follow-up study. The participants were male juvenile offenders that were treated in a residential treatment facility between 2005 and 2008. A total of 177 juvenile offenders were placed in the program during the study time frames, and of those, 173 consented to participate in the study. Of the 173 original participants, seven were removed from the follow-up; six due to an inability to acquire precise follow-up data and one due to death.

Various types of demographic data were collected, which included participant race, age at release, and primary caretaker. The race of the participants was as follows: 0.006% ($n = 1$) American Indian, 4.8% ($n = 8$) biracial, 78.3% ($n = 130$) Black, and 16.2% ($n = 27$) White. Youth were categorized into three groups based on offender type, which included two specialized populations: sex offender and substance-using offender (substance abuse as a comorbid treatment issue) as well as general offenders (all other offenders). It should be noted that the juvenile sex offenders in this study were a fairly homogenous subgroup with the vast majority having committed the

most serious sex offenses (e.g., forcible rape) and thus, as a result of the seriousness of the sex crime, had been placed in this locked residential facility. Substance-using offenders were those offenders identified with a clinical need for comorbid substance abuse treatment and as a result were examined as a specialized group, similar to juvenile sex offenders. General offenders comprised the largest population with 58.4% ($n = 101$), followed by 23.1% ($n = 40$) juvenile sex offenders and 18.5% ($n = 32$) substance-using offenders. In terms of the youths' primary caretakers, the majority (i.e., 55.4%, $n = 92$) identified the mother as the primary caretaker followed by 16.2% ($n = 27$) having no identified caretaker. The father was identified as the primary caretaker in 10.8% of the cases ($n = 18$) whereas both the mother and father were identified in 9.6% ($n = 16$) of the cases, and a grandparent was the primary caretaker in 8% ($n = 13$) of the cases.

The age of offenders at release from residential treatment was between 14 and 21 years of age with the following breakdown: 1.8% ($n = 3$) at 14, 10.8% ($n = 18$) at 15, 21% ($n = 35$) at 16, 35.5% ($n = 59$) at 17, 22.8% ($n = 38$) at 18, 0% at 19, 4.2% ($n = 7$), 3% ($n = 5$) at 20, and 0.06% ($n = 1$) at 21. The mean length of residential treatment was 10.2 months, however, the length of stay varied dramatically between offender types (general, substance-using, sexual). For example, juvenile sex offenders had a mean length of stay of 462.09 days, whereas the other two groups combined had a mean length of stay of 297.76 days.

Setting

The setting for the study was a secure, locked residential treatment facility for juvenile offenders located in a highly impoverished urban city in the Midwest United States. The facility is operated by a private agency and subcontracted by the county. The residential program was designed to treat the most serious juvenile offenders based on either severity of offense type (e.g., attempted murder) or offense history and prior record of failed placements. The treatment program was comprised of a seven-stage model rooted in cognitive-behavioral theory that has been previously described in the literature (see Calley, 2007).

Procedure

Recidivism data were collected through a search of the statewide juvenile and criminal justice electronic databases. Recidivism was defined as a new criminal offense that resulted in disposition in either the juvenile justice or adult criminal justice system. Follow-up data on recidivism were collected on all participants at two years postdischarge from the residential program.

Identification of Variables

The nine variables were selected for inclusion in this study because of having previously been identified as a risk factor for juvenile offender recidivism (Best et al., 2008; Caldwell & Dickinson, 2009; Minor et al., 2008; Mulder et al., 2010; Thornberry et al., 2003; Van de Rakt et al., 2009). As such, the selected variables had an established empirical basis.

Risk factor data for this study were collected at two intervals: (a) on admission to residential treatment and (b) on release from residential treatment. Two data forms were developed and used specifically to collect these data: the Initial Youth Information Form and the Discharge Tracking Form. Data collection specialists were master's level clinicians trained in data collection procedures prior to beginning the study and were responsible for gathering all data from official documents contained in the case record, the state juvenile justice database, and the youth and/or parent/legal guardian.

Each of the data collection tools was used to collect comprehensive information; however, only specific items from each of the tools were used for this study. Within 30 days of a youth's admission to the program, data collection specialists completed the Initial Youth Information Form, which included historical information about each youth. Specific information regarding the youth's initial involvement in the juvenile justice system, history of abuse and/or neglect, and interactions with the child welfare system, including if parental rights had been terminated, were each captured at this point by the clinician. In addition, information regarding parental criminal history was collected, and each participant was placed in one of the three offender subtype categories based on the specific offense type (sex offender, substance-involved, general).

On each youth's release from the program, the assigned data collection specialist completed the Discharge Tracking Form, documenting information about the youth's treatment program and progress. The level of caregiver involvement throughout the treatment program was captured at this point. To provide this information, clinicians were asked to quantify the participation rate of caregivers by selecting the best choice from the following options: (a) little or no participation (participated in visitation and treatment planning less than 30% of the youth's placement), (b) moderate participation (participated in visitation and treatment planning approximately 30–79% of the youth's placement, or (c) full participation (participated in visitation and treatment at least 80% of the youth's placement). In addition, program completion status (completion of all seven stages of program versus incomplete treatment), the number of days that the youth was in treatment (length of stay), and the discharge placement which included home, community-based treatment, or other, were each captured at discharge. Table 1 provides a summary of the variables.

TABLE 1 Summary of Variables

Variable	Status 1	Status 2	Status 3
Recidivism	Recidivated within 18 months of release	Did not recidivate within 18 months of release	Not applicable
Offender Type	General offender	Sex offender	Substance offender
Initial Age at Juvenile Justice Involvement	Initial involvement in juvenile justice system at or before age 14	Initial involvement in juvenile justice system at age 15 or older	Not applicable
Involvement in Child Welfare System	Prior involvement in the child welfare system	No prior involvement in the child welfare system	Not applicable
Parental Rights	Termination of parental rights	Parental rights intact	Not applicable
Parental Criminal History	Parental criminal history	No parental criminal history	Not applicable
Degree of Caregiver Support during Treatment	Little or no caregiver support	Moderate caregiver support	Full caregiver support
Length of Treatment	360 days or fewer	361–480 days	481 days or more
Program Completion	Completed treatment program	Did not complete treatment program	Not applicable
Discharge Placement	Home	Community-based placement	Other (e.g., residential placement, AWOL)

Statistical Analyses

In order to determine the effects of the nine explanatory variables on recidivism, a logistic regression with stepwise and backward variable selection methods was used. Alpha was set to 0.05 for all tests.

RESULTS

Overall, 23.4% ($n = 39$) of the youth recidivated within 24 months post-release with the range of recidivism varying greatly between offender types. Three percent of the juvenile sex offenders recidivated, whereas 19% of the substance-using offenders recidivated and 32.9% of the general offenders recidivated. The major types of recidivism crimes included unarmed robbery (16%), stolen vehicle (15%), armed robbery (13%), assault (13%), firearm (10%), and drug-related charges (10%) with the remaining recidivism charges consisting of a variety of crimes. Sex offenses did not comprise any of the recidivism crimes.

Offender type was the only variable that had a significant effect on recidivism (likelihood ratio: $\chi^2 = 12.411$, $p = 0.0020$). Youth that were classified as sexual offenders were less likely to recidivate than general and substance-using offenders, as indicated by positive parameter estimates of 0.8444 and 0.4002, respectively. General offenders were 8.08 times more likely to recidivate than sexual offenders, and substance-using offenders were 5.18 times more likely to recidivate than sexual offenders. There was no significant difference in the recidivism rate between general offenders and substance-using offenders (see Tables 2 and 3).

Age at which offenders initially became involved in the juvenile justice system was not significantly related to recidivism (likelihood ratio: $\chi^2 = 0.579$, $p = 0.4467$). Similarly, involvement in the child welfare system had no effect on the recidivism rate (likelihood ratio: $\chi^2 = 0.5919$, $p = 0.4717$). In fact, involvement in the child welfare system decreased the chance of recidivism (0.753 times less likely to recidivate) as indicated by the negative parameter estimate (−0.1421), but the difference was not significant. Child welfare involvement that led to the termination of parental rights also had no significant effect on the recidivism rate (likelihood ratio:

TABLE 2 Analysis of Risk Variables and Recidivism

Risk Variables	B	SE	Wald	*p*	Odds
Initial Age	−0.1454	0.1914	0.5835	0.4450	0.748
Parent Criminal History	0.3083	0.1912	2.5997	0.1069	1.853
Child Welfare Involvement	−0.1421	0.1854	0.5870	0.4436	0.753
Parental Rights	−0.2740	0.3289	0.6941	0.4048	0.578
Family Support	0.3348	0.2764	1.4665	0.2259	1.398
Program Completion	0.3193	0.2314	1.9040	0.1676	1.894
Length of Stay	−0.3407	0.275	1.5351	0.2154	0.711
Home	0.1683	0.3212	0.2746	0.6003	0.1692*
Community-Based Program	0.1895	0.3533	0.2877	0.5917	1.729*

*Compared to "other" discharge placement.

TABLE 3 Offender Type and Recidivism

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	−1.6731	0.2899	33.3168	<.0001
General	1	0.8444	0.3154	7.1686	0.0074
Substance	1	0.4002	0.3808	1.1045	0.2933

Odds Ratio Estimates

	Point Estimate	95% Wald Confidence Limits	
General vs. Sexual	8.077	1.831	35.626
Substance vs. Sexual	5.180	.0933	27.006

$\chi^2 = 0.7663$, $p = 0.3814$). However, similar to the relationship between child welfare involvement and recidivism, the termination of parental rights decreased the chance of recidivism, as indicated by the negative parameter estimate (−0.2740), although this difference also was not significant.

Parental criminal history had a marginal, yet not significant effect on the recidivism rate (likelihood ratio: $\chi^2 = 2.57$, $p = 0.1089$). Whereas parental criminal history increased the chance to recidivate by 1.893 times compared to no parental criminal history (positive parameter estimate = 0.3083), the difference was not significant.

The degree of support provided by the primary caretaker during the youth's residential treatment stay had no effect on the recidivism rate (likelihood ratio: $\chi^2 = 1.5331$, $p = 0.2156$). Likewise, the length of the youth's stay in residential treatment had no effect on the recidivism rate (likelihood ratio: $\chi^2 = 1.6297$, $p = 0.2017$). The length of stay decreased recidivism, as indicated by the negative parameter estimate (−0.3407), although the difference was not significant. As predicted, each increment of stay (from less than 360 days to more than 360 days or from less than 480 days to more than 480 days) decreased recidivism by 0.711 times over the preceding level.

Related to the length of stay, completion of the program had no effect on recidivism (likelihood ratio: $\chi^2 = 2.0608$, $p = 0.1511$). Discharge placement had no effect on the recidivism rate (likelihood ratio: $\chi^2 = 0.5038$, $p = 0.7773$). "Other" placement, which consisted of youth that were placed in another residential facility or that had truanted (AWOL) from the residential treatment program, had the lowest chance of recidivating (intercept = –1.347), while community placement was associated with a slightly higher chance of recidivating (intercept = +0.1683), and home placement was about the same (Intercept = +0.1895).

DISCUSSION

The 23.4% overall recidivism rate found in this study is lower than rates previously found among juvenile offenders following participation in residential treatment (Hendriks & Bijleveld, 2008; Minor et al., 2008). In addition, the recidivism rate of juvenile sex offenders is one of the lowest that has been reported to date. To illustrate this, a meta-analysis including 12 studies of recidivism of juvenile sex offenders found rates ranging from 1.7 to19.6% (Caldwell, 2002). More recently, recidivism rates have ranged from 30% (Hendriks & Bijleveld, 2008) to 59.3% (Caldwell & Dickinson, 2009). The recidivism rates may have been higher if the follow-up period had been extended, and recidivism rates could also have been higher if recidivism had not been defined as a new adjudication but a new arrest. However, because previous support has been provided for the manner in which both

of these parameters were used in this study (length of follow-up, operational definition of recidivism), the results provide effective new data on recidivism rates of juvenile offenders. Most significantly, the recidivism results must be examined as primary outcomes related to treatment efficacy.

In the examination of factors related to recidivism, it is quite interesting that offender type was the only factor found to significantly impact recidivism, with general offenders being far more likely to recidivate than substance-using and sexual offenders. Because the trajectory of juvenile offending behaviors has been found to be multidirectional, with some youth beginning with sex offenses and then later committing nonsexual crimes and vice versa, this finding may have limited importance. However, additional oversight mechanisms and supports that may have been provided to the two specialized groups following treatment must also be considered for the potential role that they may have played in reducing recidivism for those groups of offenders. This is because some of the youth initially adjudicated on sex offenses were placed on the sex offender registry and may also have been provided community-based sex offender treatment following release. Similarly, those youth identified as substance-using may also have been provided additional supports as a result of their specialized classification. Fully examining the effects, if any, which the inclusion in a specialized group of offenders may have had on recidivism would require specifically including posttreatment supports related to offender type as a factor in future outcomes studies.

In addition to the somewhat surprising results related to offender type, equally surprising results were found in the following areas: age at which juveniles committed their first offense, child welfare involvement, and termination of parental rights. Because the age at which juveniles initially offend and/or become involved in the juvenile justice system has long been found to be a significant predictor of recidivism (Archwamety & Katisyannis, 1998; Benda et al., 2001; Katsiyannis & Archwamety, 1997; McMackin, Tansi, & LaFratta, 2004; Minor, Hartmann, & Terry, 1997; Myner, Santman, Cappelletty, & Perlmutter, 1998; Trulson et al., 2005), the fact that this finding was not supported in this study was indeed surprising. Likewise, because a history of childhood abuse and/or neglect has historically been identified as a risk factor (Archwamety & Katisyannis, 1998; Dembo et al., 1998; Hendriks & Blijleveld, 2008; Minor et al., 2008), the lack of similar support in this study is of interest. Both of these nonsignificant findings may be accounted for by the fact that prior services and/or interventions were provided to these youth and families, thereby decreasing their risk of further offending. As such, earlier juvenile justice and child welfare services may have served as protective factors that guarded against future recidivism.

The degree of support provided by the caretaker had no effect on recidivism. Although this relationship has been previously established in at least one study (Ryan & Yang, 2005), it is one that requires additional

exploration, particularly in light of these contrasting findings. However, consideration must also be given to the fact that parental and/or caretaker involvement may have been limited to begin with, and therefore a lack of caregiver support during treatment may have had little bearing on the youth's outcomes.

Although history of parent criminality had no significant effect on recidivism, it did have a marginal effect, with parental criminal history increasing the likelihood of juvenile offending. This finding is inconsistent with some previous research (Farrington et al., 2001; Farrington et al., 1996; Thornberry et al., 2003). This finding was, however, consistent with the most recent study that also revealed evidence, albeit nonsignificant, of the intergenerational transmission of criminality (Van de Rakt et al., 2009).

Finally, the relationship between length of stay and recidivism was not found to be significant; however, each increment of extended length of stay was related to a decrease in recidivism. Although not significant, this finding is consistent with previous findings indicating shorter length of stays associated with increased risk of recidivism (Archwamety & Katisyannis, 1998; Hendriks & Blijleveld, 2008; Katsiyannis & Archwamety, 1997; McMackin et al., 2004).

When discussing the outcomes, it is important to highlight that there were several limitations that could have impacted the findings of this study. Chief among these is the length of follow-up. Although previous findings have revealed that the majority of reoffenses occur in the first two years following treatment, a longer follow-up time frame may have provided different results and provided support for some or all of the nonsignificant findings. Another limitation of the study was the lack of pretreatment information related to parent/caregiver involvement that may have provided baseline data. Such information may have provided insight into the degree of meaning that such support held for each youth. A third limitation is that the study was limited to a single facility, and thus the results may not be generalized. Finally, information regarding the type and scope of services that may have been provided to the different groups of offenders may have helped to explain the treatment outcome differences among the groups.

Despite these confines, this study has at least three important implications for future research on juvenile offender recidivism. First is the need for more randomized and multifacility, multiregion outcome studies. The recidivism studies to date have largely focused on recidivism related to single programs, specific program types (community-based, residential), and regional juvenile justice systems, as did this one.

Second, recidivism studies should be used as part of a comprehensive and rigorous treatment outcome evaluation in order to increase understanding of the relationship between interventions and outcomes. Doing so allows us to rigorously evaluate specific treatments provided to juvenile offenders in order to identify efficacious practices.

Finally, because the majority of risk factors were not found to impact recidivism in this study, further examination is warranted. This is of particular importance not only because of the results of this study but also because of some of the recent mixed findings related to risk (Minor et al., 2008; Van de Rakt et al., 2009). Moreover, because of the significance that the juvenile justice system places on evaluation of risk factors in decision-making—from disposition to sentencing to placement and beyond—it is our responsibility to continue to examine risk factors to ensure that each continues to be empirically supported.

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