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Evaluating the Impact of Two Cognitive Behavioral Therapy Programs on Recidivism in
Chronic Juvenile Offenders

By

Christine Elizabeth Gerchow

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in

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the

University of California, Berkeley

Committee in charge:

Professor Frank C. Worrell, Chair

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Abstract

Evaluating the Impact of Two Cognitive Behavioral Therapy Programs on Recidivism
in Chronic Juvenile Offenders

by

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Professor Frank Worrell, Chair

The goal of the present study was to examine the effect of two cognitive behavioral therapy programs on recidivism in a sample of chronic youthful offenders ($N = 156$) and to evaluate the relationship between commonly identified recidivism risk factors (i.e., prior criminal charges, parental history of criminal behavior, gang involvement, mental health diagnoses, and number of probation violations) and re-offending. All participants were male, 19 to 23 years of age, and were currently, or had been, under the supervision of a Western state's county probation department. Participants were court-mandated to take either Aggression Replacement Training (ART, $n = 90$) or ART and Thinking for Change (T4C, $n = 66$). Survival analyses controlling for different custody release dates indicated that ART+T4C participants demonstrated lower recidivism rates than ART-only participants. The difference was first clearly depicted around Day 300 post-release when approximately 45% of ART-only participants had been arrested compared to 35% of ART+T4C participants. The difference became more apparent by day 500 when 80% of ART-only participants had been arrested compared to 40% of ART+T4C participants. The data provide a statistically significant defense that ART+T4C treatment participants are likely to remain in the community longer without re-arrest than ART-only participants. Regarding recidivism risk factors, a Kaplan Meier survival curve indicated that mental health diagnoses, history of parental arrest, gang involvement, felony, violent and weapons charges, and probation violations did not predict faster time to arrest. Interestingly, the Kaplan Meier analysis indicated that non-violent charges pre-treatment predicted post-treatment re-offending.

Dedication

I dedicate my dissertation work to my husband, Jonathan Alonso, to my parents, Pamela and Richard Gerchow, and to my siblings, Lauren and Michael.

I also dedicate this dissertation to my advisor, Professor Frank Worrell, to my ATDP colleagues, to my fellow UC Berkeley doctoral students, and to Alton Pitre, a Morehouse College student and leader within the Anti-Recidivism Coalition.

Finally, I dedicate this dissertation to the youth in the juvenile justice system and to the staff who serve them. May you never lose hope!

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Evaluating the Impact of Two Cognitive Behavioral Therapy Programs on Recidivism in Chronic Juvenile Offenders

Recidivism, or the relapse of delinquent behavior, is one of the most fundamental concepts in juvenile justice (National Institute of Justice [NIJ], 2008). There is no national recidivism rate measure (Office of Juvenile Justice and Delinquency Prevention [OJJDP], 2006), but recidivism rates among samples of state committed delinquents have approached 90% for any re-arrest (Trulson, Marquart, Mullings, & Caeti, 2005; Weibush, Wagner, McNulty, Wang, & Le, 2005), although rates as low as 55% have been reported (Snyder & Sickmund, 2006). In the state of California, more than half of arrested youth are likely to reoffend within a three year period (California Department of Corrections and Rehabilitation, 2010). Furthermore, California youth sent to the California Youth Authority (CYA) have a 75% re-arrest rate after three years and a 90% re-arrest rate after eight years (Ezell & Cohen, 2005).

With recidivism rates rarely falling below 60% for juvenile delinquents (McMackin, Tansi, & Lafratta, 2004), some have wondered if the remarkable consistency in the behavior of institutionalized juveniles (i.e., that many juveniles continue to offend, both frequently and seriously) is an indicator that interventions are not useful (Trulson et al., 2005). Nevertheless, research on serious and chronic juvenile offenders has found that although reoffending should be expected, some offenders do change, and thus it is never too late to intervene in the lives of troubled youth (Lancaster, Balkin, Garcia, & Valarezo, 2011; Scott, Tepas, Frykberg, Taylor, & Plotkin, 2002; Trulson et al., 2005). Interventions for troubled youth exist to (a) repair the harm of young offenders, (b) protect the public, and (c) rehabilitate the youth (Onifade, Wilkins, Davidson, Campbell, & Petersen, 2011). Interventions for juvenile offenders include psychodynamic, multi-systemic, and functional family therapy; cognitive behavioral therapy (CBT); vocational and substance abuse counseling; boot camps; and wilderness camps.

Despite the range of interventions, a relatively small and varied literature focuses on whether the interventions reduce juvenile recidivism (Trulson, Haerle, DeLisi, & Marquart, 2011). This is ironic given that much of the juvenile probation and counseling community is entrenched in the world of juvenile offender rehabilitation, yet peer-reviewed publications tying treatment to offender outcomes remain scarce (Lancaster et al., 2011). One of the most significant gaps in this literature is that few studies have examined whether interventions reduce recidivism among chronic offenders (Trulson et al., 2011).

In this study I examined the effectiveness of two cognitive behavioral interventions on the recidivism rates of a sample of chronic juvenile offenders. Specifically, I examined the effect of Aggression Replacement Training (ART; Glick & Gibbs, 2011) delivered to one group of juveniles and ART and Thinking for a Change (T4C; Bush, Glick, & Taymans, 1998) delivered to another group of juveniles. Recidivism, operationalized as post-release arrest and number/type of charges, was examined for ART and ART+T4C groups. I also examined whether covariates with known relationships to recidivism predicted re-arrest in ART and ART + T4C participants.

I begin with a discussion of juvenile delinquency because the juvenile justice system is the system through which ART and T4C interventions are implemented. I

continue with an in-depth discussion of recidivism because juvenile recidivism is the outcome variable of this study. I define recidivism, explain how recidivism can be operationalized, review the theories and predictors of recidivism, and describe the most popular interventions aimed at reducing juvenile recidivism. I then discuss cognitive behavioral therapy because both ART and T4C are cognitive behavioral therapy-based interventions. The literature review ends with an in depth discussion about ART and T4C curriculums, philosophies, and evaluations.

Juvenile Delinquency

By definition, juvenile delinquency, also known as juvenile offending or youth crime, is participation in illegal behavior by individuals younger than the statutory age of majority (Siegel & Welsh, 2012). Juvenile delinquents are children or youth who have violated any federal, state or local law, or who escaped from confinement in a local or state correctional facility (Lawrence & Hesse, 2010). Illegal juvenile behavior is generally categorized into criminal offenses (e.g., violent crime such as murder, forcible rape, robbery, aggravated assault), property offenses (e.g., burglary, larceny, theft, and arson), and public order offenses (e.g., bribery, substance use, prostitution). Thus, a juvenile delinquent can be anyone from a youth who committed a so-called victimless crime such as truancy to a youth who committed a crime such as aggravated assault (Lawrence & Hesse, 2010).

Historical context of juvenile justice system. The idea of a separate justice system for juveniles is just over one hundred years old. Since the development of the juvenile justice system, much has occurred to influence the treatment of juveniles in judicial settings, and, by extension, to influence the rehabilitation options available to youth. The first juvenile court and child and adolescent psychiatry clinic were created in 1899 and 1909, respectively (May, Osmond, & Billick, 2014). The juvenile justice courts and clinics were created in recognition of the developmental differences between children and adults and had the explicit goal of helping youth return to a healthy path of development.

Social reformers spearheaded the development of clinics in cities such as New York (e.g., the New York House of Refuge), and Chicago (e.g., the Chicago Reform School). The clinics initially outpaced the courts' progress to address the needs of youths. In fact, the rights of youth in legal settings were not adequately recognized until 1967 when the landmark *Gault v. Arizona* decision (aka *re Gault*, 1967) held that juveniles in delinquency proceedings were entitled to the same rights as adults (e.g., the right to confront witnesses and the right against self-incrimination).

In the early 1980s, just after *re Gault* delineated between youths and adults, adolescents were implicated in a dramatic uptick of violent crime (Levitt, 2004). In response to the uptick, the public—and soon enough, the politicians—favored a “hard on crime philosophy” that focused less on rehabilitation and more on harsh penalties for juvenile offenders, including the return of violent adolescent offenders to adult court settings. Politicians also favored longer juvenile sentencing periods which ultimately led to only modest declines in juvenile reoffending (May et al., 2014). By the late 1980s, the boundary between the juvenile and adult justice systems had eroded (Trulson et al., 2011) and there continued to be a focus on institutionalizing and punishing youth offenders.

Although the “tough on crime” laws of the 1980s and 1990s remain in effect today, there has been a renewed effort in the first decades of the new century to focus on deinstitutionalizing juvenile offenders and addressing their needs through smaller facility-based settings or community-based treatment (“History of the juvenile,” 2014). This renewed effort to treat and rehabilitate juvenile offenders is in keeping with the 100 year old mission and purpose of the modern juvenile justice system (“History of the juvenile,” 2014).

Juvenile delinquency statistics. The number of youth in the juvenile justice system has increased over the past several decades (Cook & Gordon, 2012). OJJDP (2012) estimated that in 2009, 1,800,000 juveniles were arrested in the United States, including 85,900 for violent crimes. The U.S. juvenile courts handled an estimated 4,600 delinquent cases per day in 2007, as compared to an estimated 1,100 in 1960 (Puzzanchera, Adams, & Sickmund, 2010). Of the cases handled in 2007, 1.1 million delinquent cases resulted in adjudication (i.e., formal charges) and approximately 50% resulted in probation (Puzzanchera et al., 2010).

In parallel with the courts handling an increased number of juvenile court cases, there was a 48% increase in the number of delinquent youth held in detention between 1985 and 2007 (Puzzanchera et al., 2010). Delinquent youth whose offenses warranted detention ended up in one of the 745 state-operated juvenile justice facilities serving almost 140,000 youth (Springer, 2011). Of those 140,000 youth, approximately 70% were held in state-funded, post adjudication residential facilities (American Correctional Association, 2008).

California juvenile delinquency statistics. The California Department of Justice reported that 186,000 juvenile arrests were made in 2010, including 52,000 (28%) juvenile felony arrests (California Legislative Analyst’s Office, 2012). In 2011, 149,563 arrests were made in California, with felonies accounting for 33.3% of the arrests; misdemeanors for 53.1%; and status arrests accounting for the remaining 13.5% (California Department of Corrections and Rehabilitation [CDCR], 2010a). Of the 149,563 arrests made in 2011, 78.9% resulted in a referral to probation, and 19.8% resulted in the juvenile being counseled and released. Juveniles under age 12 and females were more likely to be counseled and released than older and male juveniles. Disaggregated data from arrests made in California during 2011 indicate that 46.3% and 35.9% of female and male referrals to probation, respectively, were for felony property offenses; 24.6% and 23.4% for felony violent offenses; and 28.8% and 30.4% for other offenses (California Department of Justice [CDJ], 2011). African Americans were referred to probation departments for violent offenses more than any other race/ethnic group (33.1 percent compared to 22.3 percent of Hispanics, CDJ).

Juvenile delinquency trajectory. Youth involved in the juvenile justice system generally receive some type of disposition following arrest. A youth’s disposition may include being (a) counseled and released; (b) turned over to another agency; or (c) referred to probation. In 2011, 19.8% or 29,580 of the youth arrested in California were counseled and released (CDCR, 2010a). Only 1.3% or 1,915 youth were turned over to other agencies (CDCR, 2010a). The remaining 78.9%, or 118,058 youth arrested in California, were referred to probation (CDCR, 2010a).

Referral to probation. Juvenile referrals occur when a juvenile is brought to the attention of the probation department for a case review (CDJ, 2011). Most juveniles are

referred by law enforcement (i.e., in California nearly 9 of 10 juveniles referred to county probation were referred by law enforcement agencies), although referrals may also come from schools, parents, and public or private agencies (CDJ). Youths' referrals can be new referrals, usually for first-time offenders, and subsequent referrals, usually for youth who are already under probation supervision and who have violated probation. Once a juvenile is referred to the probation department, a probation officer determines whether the case should be acted upon, closed, or transferred. If the referral will be acted upon, the officer has to decide whether the juvenile should be released or detained and whether the juvenile should be placed on informal probation or be petitioned to court (CDJ). In California, more than one-third (37.7 percent) of the juvenile cases referred to county probation departments were closed at intake and one-half (49.7 percent) resulted in a petition being filed in juvenile court.

Petition to the court system. If a juvenile's case proceeds for formal court processing, the district attorney files a petition with the juvenile court to initiate court procedures. Petitions can either be "new" for first time offenders or those not supervised by probation or "subsequent" for juveniles who re-offended while under probation supervision. At the time of court petitioning, juveniles can also be petitioned to adult court. For example, California's probation departments transferred 912 cases to the adult system in 2011 (CDCR, 2010a). Petitioning may also involve juveniles being classified as wards of the court. Juvenile wards of the court are youth who are under the protection of the courts, usually because the court determined that the youth will be subject to abuse or neglect if they remain with their parent(s) or if both of a juvenile's biological or adoptive parents are deceased. In 2011, nearly two-thirds (64.7 percent) of juveniles handled formally by the juvenile court were made wards of the court (CDCR, 2010a).

Detention. The decision to detain is made by the courts, usually within 72 hours of arrest (OJJDP, 2005). In general, most youth are detained for only a few days and subsequently sent home with no restrictions ("straight release"), sent home for home detention, monitored through an electronic ankle bracelet, or required to report to a day/evening supervision center for a predetermined time period (OJJDP, 2005). Other youth may be sent to residential placement. Residential placement could mean a youth is sent to a group home, shelter care, transitional living program, or foster care. Youth assigned to these programs are in the custody of the courts because they have been removed from their guardians' homes. While in the group, transition, or foster programs youth often receive mental health, vocational, and educational services.

Not all youth are sent home quickly or directed to residential placements. Youth with more complicated or serious offenses are often detained for weeks or months (OJJDP, 2005). Youth detained for longer periods of time are initially classified through custody and program needs assessment. The goal of the custody and program needs assessment is to evaluate the number and severity of the youths' current charges, the youths' arrest and juvenile court records, the history of the youth's successes or failures while under community supervision, and the youths' *stability* factors such as age, school attendance, education level, drug/alcohol abuse history, and family structure. The needs assessments inform where a youth will be transferred and for how long and what types of treatment the youth will receive. For example, youth with substance abuse issues might be placed in a substance treatment program and youth with mental health

disorders might be placed in facilities with individual or group therapy services, although the scarcity of substance and mental health treatment facilities often makes the justice system the default mental health provider (Torrey, Kennard, Eslinger, Lamb & Pavle, 2010).

After youth receive treatment in detention, group, transitional or foster settings, the decision is made as to when the youth will be released from custody. This process, known as “reentry,” or “offender transition” is overseen by juvenile parole boards in some states (e.g. California, Illinois) and judges or juvenile correctional agencies in other states (OJJDP, 2005). The decision to release a youth from custody is based on eight components shown to have a statistical relationship to the likelihood of offending. These components are age at first adjudication, prior criminal behavior, institutional commitments of 30 days or more, drug or alcohol use, parental supervision, school disciplinary problems, and peer relationships (OJJDP, 2005).

Youth released from a foster or transitional home may be reunited with their families, whereas youth released from secure facility treatment programs may be sent home with an electronic ankle monitor, directed to group homes, ordered to an intensive supervision program, or required to participate in day and evening reporting center programs. As part of intensive supervision, offenders live at home or at a suitable alternative site in the community and may be required to meet with case managers a minimum of three times per week. Offenders’ families may also receive services. Youth ordered to day and evening reporting center programs may live at home but are required to report all activities to case managers during a morning or evening meeting. Regardless of program setting, the goal of offender transition is for probation-exiting youth to avoid probation violations and to perform better in academic, vocational, and social domains.

Impact of juvenile delinquency. Youth arrests, referrals, petitions, and detentions generate significant financial costs to society at community and individual levels. There are costs that society incurs to prevent or control crime, costs that offenders impose on the victims, and costs that offenders incur. Delisi and Gatling (2003) reported that a typical criminal career from juvenile to adult costs society an estimated \$1.1 million (in 2002 dollars). With respect to juvenile crime, criminal involvement limited to juvenile years cost society an estimated \$80,000-\$325,000, or 6% to 22% of the total costs of a criminal career (Welsh et al., 2008). The expense of juvenile crime is particularly high for youth who are detained in juvenile detention settings. For instance, California spends an estimated \$604,552 each day to supervise, feed, counsel, and educate detained youth (Justice Policy Institute, 2009).

Juvenile delinquency also imposes social, emotional and physical costs on juvenile offenders, victims, families, and communities. Juvenile offenders find themselves at an increased risk for repeated social, occupational, and academic failures, and with repeated failures, they are at risk to drop out of school, develop mental illness, and face unemployment, all of which may lead them to develop weak bonds with the labor market, to participate in adult crime, and to end up in the adult criminal justice system (Sampson & Laub, 1997). Crime victims may be affected by anxiety and reduced quality of life (Hanson et al., 2010). The families of juvenile delinquents often suffer consequences such as alienation, victimization, homelessness, family destabilization, lost productivity, depression, and obesity (Travis & Solonom, 2001).

Finally, communities are left to fund early prevention programs, remedial services for juveniles, and community policing efforts (Bradshaw et al., 2008; McCollister, French, & Fang, 2010).

Recidivism

Probation and social welfare professionals hope that juvenile delinquents avoid subsequent contact with the justice system. Unfortunately, this is not always the case as many youth return to violating laws, an act known as recidivism. Among studies that reported overall recidivism outcomes of delinquents following their release from state juvenile incarceration, recidivism rates approached nearly 90% for any re-arrest and as high as 79% for a repeat felony offense within 1 to 5 years following release from confinement (Trulson et al., 2005; Weibush et al., 2005). Reported recidivism rates such as these need to be interpreted cautiously, however, because recidivism rates from different states and even from the same states within different jurisdictions are often based on different indicators (e.g., re-arrest, adjudication, commitment to a correctional facility). The broad range of indicators makes it difficult (and even contentious, Lancaster et al., 2011) to draw meaningful conclusions about program or systems performance.

Defining and operationalizing recidivism. Recidivism is the gold standard by which juvenile offender treatment programs are measured, yet there is no uniform agreement about what constitutes recidivism (McMackin et al., 2004) and no widespread practice of regularly collecting or reporting recidivism data (Gelb & Adams, 2014). By definition, recidivism refers to the repetition of criminal behavior (Snyder & Sickmund, 2006) or a relapse to prior criminal habits (NIJ, 2008; OCFS, 2008). Recidivism involves two elements: (a) the commission of an offense (b) by an individual already known to have committed at least one other offense (Blumstein & Larson, 1971). These two elements can be operationalized differently and result in different reported recidivism rates.

The commission of an offense can be measured by rearrests (Loughran et al., 2010; Myers, 2003; Ryan & Yang, 2005), convictions (Luong & Wormwith, 2011; McMackin et al., 2004) or a combination thereof (Loughran et al., 2009; Office of Children and Family Services [OCFS], 2008). As of 2014, 16 states measure juvenile recidivism based on arrests, 28 measure recidivism based on adjudication or conviction, and 25 measure recidivism based on commitment to juvenile or adult correctional facility (Gelb & Adams, 2014). There are benefits and pitfalls to each of these recidivism measures. Specifically, measurements of arrests, adjudication, or commitment rely on data from official court records, which, though relatively easy to obtain, can be difficult to understand. Additionally, there is the question of whether recidivism data collected from official court records underestimates the prevalence of antisocial behaviors during a given period (Cottle, Lee, & Heilbrun, 2001).

Farrington, Joliffe, Hawkins, and Catalano (2003) compared individual offending frequency (the average number of offenses per offender) as indicated in court records and self-reports. They found 4.6 offenses per offender tallied in court records compared to 49.2 offenses per offender disclosed in self-reports. This discrepancy is alarming, although it is important to note that self-reports can be distorted due to inferences about criminal involvement, survey instrument design, and sample selection

bias (Brame, Fagan, Piquero, Schubert, & Steinberg, 2004; McCord, Widom, & Crowell, 2001).

In summary, recidivism is one of the most fundamental yet complex concepts in criminal justice (NIJ, 2008). Although recidivism is rather simply defined by a return to illegal behavior after an initial arrest, the operational definitions of recidivism are subject to jurisdictional, local, and state policies, as well bureaucratic differences (Lipsey & Cullen, 2007). The most common operational definition of recidivism appears to be based on a youth's re-arrest or adjudication (Gelb & Adams, 2014), although a recent California initiative seeks to define recidivism as an arrest resulting in a charged file by a prosecutor within three years of an individual's release from incarceration or placement (California Department of Justice, 2014). Nevertheless, there is no uniform measure of recidivism and it is difficult and even irresponsible for policy makers to compare recidivism data across systems (Harris, Lockwood, Mengers, & Stoodley, 2011).

Theories of recidivism. There is no single theory that explains recidivism (Ryan & Yang, 2005). Repeated participation in illegal behavior involves social learning, cognitive, and behavioral factors. Three theories that attempt to integrate the social learning, cognitive, and behavioral factors involved in recidivism are cognitive transformation theory (Giordano, Cernkovich, & Rudolph, 2002), the life course theory of crime (Laub & Sampson, 1993), and the character development model (Cherrington & Cherrington, 2000). The cognitive transformation theory of crime (Giordano, Cernkovich, & Rudolph) is defined by four key elements in the desistance process. First, individuals develop an openness to change and begin to view change as a possibility. Second, individuals are exposed to circumstances (hooks) that motivate them to change. For instance, an individual may be offered a job or the opportunity to attend a comprehensive drug rehabilitation treatment program. Third, individuals develop conventional replacement selves, a process wherein they visualize new lives, occupations, and identities. Finally, individuals reinterpret their past illegal behaviors. This part of the process requires cognitive (and moral) sophistication, because individuals (a) acknowledge that their behaviors were harmful to other individuals, families, and communities; (b) describe how the behaviors were harmful; and (c) justify why they no longer wish to participate in such behaviors. Thus, the four elements integrate psychological (e.g., developing an openness to change; considering a replacement self; reflecting on behaviors) and social elements (e.g., hooks such as jobs, intimate relationships, community volunteering, church involvement).

The life course theory, developed by Laub and Sampson (1993), integrates social learning, social control, and cognitive transformation theories. Life course theory is similar to the cognitive transformation theory in that it takes a social psychological approach to understanding recidivism. Articulating their theory, Laub and Sampson argued that recidivism is a process that depends on subjective (internal) factors such as attitudes, self-esteem, and identity, and social (external) factors such as employment, marriage, parenthood, and treatment interventions (Burraston, Cherrington, & Barh, 2012). Accordingly, the life course theory of crime emphasizes that recidivism decreases if a probationer creates bonds with family members and friends, participates in structured activities, and seeks gainful employment. Conversely, probationers increase

their chances of reoffending if they associate with deviant peers or fail to participate in structured activities and social networks.

Different from the cognitive transformation theory and the life course theory of crime, the character development model—developed by Cherrington and Cherrington (2000)—is premised heavily on behavior. The character development model is informed by Bandura's (1986) and Kohlberg's (1981) theories and encompasses four concepts: attitudes, behavioral intentions, behavior, and behavioral explanations. According to the model, behavioral intentions and behavioral explanations serve as intervening variables that explain the reciprocal impact of attitudes and behavior on each other (Burraston et al., 2012). For example, recently released juvenile offenders may feel uncomfortable asking for help at a vocational center (an attitude). These individuals may intend to avoid using the vocational center (a behavioral intention). Individuals with such attitudes and behavioral intentions may fail to attend vocational programming and job interviews (behavior). Without access to programming or interviews, the individuals may not find work and could blame this circumstance on societal injustice (behavioral explanation).

In another scenario, individuals may have strong attitudes that a vocational center has undesirable jobs or judgmental people, or that the center will not offer them the money they need. Such individuals might go beyond merely avoiding the vocational center and instead reason that selling drugs is the only way to make money. In this instance, the scenario is composed of a specific behavioral intention informed by a strong attitude. Of course, behaviors can reinforce attitudes when rationalizations are created in the behavioral explanation process (Burraston et al., 2012). For example, an individual who was arrested for selling drugs might say, "I had to do it or my family won't eat!" This statement, based on an anti-social behavior, reinforces the attitude that there were no other moneymaking options.

The character development model posits that the amount of change in one's attitudes and values increases as the need to justify behavior increases. Furthermore, the model argues that the rationalization of antisocial behavior can be reversed when individuals recognize that their behavior is wrong and make a plan to change. A reversal would be contingent on many of the components referenced in the cognitive transformation and life course theories of crime (e.g., association with prosocial peers, seeking vocational counseling, securing a job, participating in rehabilitation programs or social networks). In sum, the cognitive transformation theory, life course theory of crime, and character development model offer unique yet overlapping explanations of recidivism. Cognitive transformation theory emphasizes thoughts related to openness to change, exposure to hooks that motivate one to change, development of a replacement self, and the reinterpretation of illegal behavior. The life course theory emphasizes internal and external factors, both social and cognitive, that influence desistance. Finally, the character development model describes an internal change model that is influenced by a reciprocal relationship between behaviors and attitudes.

Predictors of recidivism. One of the central questions in criminology is how to prevent juvenile and adult offenders from reoffending. Despite a large body of research related to adolescent delinquency, only a handful of studies have focused on the risk factors contributing to juvenile recidivism (Chang, Chen, & Brownson, 2003). Results of those studies reflect the dictum that the best predictor of future behavior (i.e.,

recidivism) is past behavior (McMackin et al., 2004), although there is evidence that factors unrelated to past behavior are also implicated in juvenile recidivism.

As stated, the juvenile recidivism literature emphasizes past behavior as a predictor of reoffending. For instance, Cottle, Lee, and Heilbrun's (2001) meta-analytic review of 22 studies published between 1983 and 2000 indicated that offense history variables were the strongest predictors of juvenile recidivism. Offense history variables linked with recidivism include younger age at first contact with the law (Cottle et al., 2001), younger age of onset of criminal behavior (Cottle et al., 2001; Farrington, 1991; Yoshikawa, 1994), more pre-commitment arrests (Lattimore, MacDonald, Piquero, Linster, & Visher, 2004; McMackin et al., 2004; Minor, Wells, & Angel, 2012; Weibush et al., 2005), prior incarcerations or commitment (Benda, Corwyn, & Toombs, 2001a, 2001b; Ryan et al., 2001), more institutional infractions (Lattimore et al., 2004), and gang affiliation (Archwamety & Katsiyannis, 1998; Benda et al., 2001a, 2001b; Caudill, 2009; Huebner, Varano, & Bynum, 2007; Katsiyannis & Archwamety, 1997; Lattimore et al., 2004; Trulson et al., 2005; Weibush et al., 2005), although there are contradictory findings regarding whether gang affiliation predicts recidivism (Brownfield, Sorenson, & Thompson, 2001; Lattimore, Visher, & Linster, 1995; Minor et al., 2008). Researchers have also confirmed that the type of crime committed by juvenile offenders (e.g., property, violent) appears to be linked to re-offending (Dembo et al., 1998; Myner, Santaman, Cappellety, & Perlmutter, 1998).

Offense history variables are not the only variables that predict recidivism. Farrington (1987) reported that significant precursors to recidivism were school problems, substance abuse, low intelligence quotient (IQ), family dysfunction, family criminal involvement, parental substance abuse, and poor parental supervision practices. Later studies supported these findings. For instance, Dembo et al. (2008) identified substance abuse and family dysfunction as significant recidivism predictors and further identified age, race, gender, and neglect histories. Other researchers reported links between recidivism and parental criminal involvement (Farrington, 1989; Farrington, Jolliffe, Loeber, Stouthamer-Loeber, & Kalb, 2001; Fergusson, Horwood, & Nagin, 2000; Huesmann, Eron, & Dubow, 2002; Murray & Farrington, 2005; Murray, Gunner-Janson, & Farrington, 2007; Robins, West, & Herjanic, 1975; West & Farrington, 1977; Zigler, Taussig, & Black, 1992), special education participation (Archwamety & Katsiyannis, 2000; Minor et al., 2008; Trulson et al., 2005), victimization history (Minor et al., 2008; Trulson et al., 2005), low socioeconomic status and social isolation (Dumas & Wahler, 1983; Wahler & Dumas, 1987), age (Minor et al., 2008; Trulson et al., 2005), being male (Minor et al., 2008), and disruption of primary attachment relationships (Ford, Chapman, Connor & Cruise, 2012).

Another precursor to recidivism is the presence of a mental health diagnosis. Studies indicated that a history of non-severe pathology (Cottle et al., 2001) or severe pathology (Leistico, Salekin, DeCoster, & Rogers, 2008; Simourd & Andrews, 1994) predicts recidivism. In the case of severe pathology, a meta-analytic review (Leistico et al., 2008) and linear regression analysis (Basque, Toupin, & Côté, 2012) supported the relevance of psychopathy as a predictor of recidivism. In fact, psychopathy has been reported to significantly predict recidivism (Asscher, van Vugt, Stams, Deković, Eichelsheim, & Yousfi, 2011; Dembo, Wareham, Polythress, Cook & Schmeidler, 2008) after controlling for criminal history variables (Taylor, Kemper, Loney, & Kistner,

2009). It is important to note, however, that although many studies indicate a relationship between mental health pathology and recidivism, some authors reported weak effect sizes for the impact of mental health diagnosis, even psychopathy, on violent recidivism (Edens, Campbell, & Weir, 2007; Guy, Edens, Anthony, & Douglas, 2005).

In sum, a limited number of investigators have studied the factors that predict recidivism. So far, the evidence indicates that the most reliable juvenile recidivism predictors relate to offense history, age at first offense, parental criminal history, gender (Burraston et al., 2012), and prior incarcerations and commitments (Trulson et al., 2011). There are a range of other variables that have been demonstrated to predict recidivism (e.g., special education status, socioeconomic status), but more studies need to be commissioned to strengthen the evidence base.

Interventions to reduce recidivism. As stated, there needs to be more research about the predictors of recidivism. With deeper knowledge of the predictors, juvenile probation administrators will be able to design better interventions. Several interventions have attempted to reduce juvenile recidivism, but effective interventions remain elusive (Tarolla, Wagner, Rabinowitz, & Tubman, 2002). Interventions aimed at reducing recidivism include incarceration, solitary confinement, boot camps, and “scared straight” prison exposure; psychodynamic, multi-systemic, and functional family therapy, vocational and substance abuse counseling; and cognitive-behavioral interventions, such as ART, T4C, Reasoning and Rehabilitation Program, and Moral Reconciliation Therapy (Armeliu & Andreassen, 2009). In the 1990s and 2000s many of these approaches yielded poor outcomes (Armeliu & Andreassen, 2009), much the way they did decades ago when Martinson (1974, p. 48) reported that “nothing works” in the rehabilitation of criminal offenders. Nevertheless, some interventions, particularly those grounded in cognitive behavioral therapy, have led to improvements in recidivism rates. I will review five of the most frequently implemented recidivism interventions: family/systems therapy; parent and/or social skills training; therapeutic wilderness programs; peer-group counseling; and boot camps.

Family/systems therapy. Family/systems therapy is premised on the notion that juvenile delinquent behavior is developed and maintained through maladaptive family interactions that facilitate coercive, aggressive exchanges (Tarolla et al., 2002). To address these interaction patterns, family/systems therapy integrates techniques such as behavioral contracting, specification of rules, and positive reinforcement to improve child/parent communication. There is some evidence that family/systems therapy reduces juvenile recidivism. For example, Gordon, Arbuthnot, Gustafson, and McGreen (1988) reported that participants in Functional Family Therapy, a behavior systems in-home family therapy, had lower recidivism rates compared to the control group (i.e., 11% vs. 67%). Similar to Gordon et al., Kadish et al. (1999) reported that participants in family therapy (in this instance, multi-systemic ecological family therapy) had a recidivism rate of 25% after six months compared to those not enrolled in family therapy (64%).

Other family intervention therapies have also yielded positive outcomes. For example, multiple studies reported that family participation in multiple-family-group intervention (MFGI) or family empowerment intervention (FEI) significantly lowers youth recidivism rates (Dembo, Wareham, Polythress, Cook & Schmeidler, 2008; Quinn

& Dyke, 2004; Ryan & Yang, 2005), although one meta-analytic review cautioned that family therapy evaluations often fail to apply rigorous methods, and, when rigorous methods are applied, the interventions are found ineffective (Latimer, 2001).

Parent and/or social skills training. Parent training assumes that parents can be taught to positively change their children's behavior. Social skills training assumes that juveniles resort to delinquent tasks because they lack the skills to gain desired rewards through appropriate channels (Tarolla et al., 2002). Parent and/or social skills training might include psychoeducation (e.g., on effective discipline), prosocial behavior modeling, or instruction in negotiation (Tarolla et al.). Evaluations of parent training programs indicate that training is more effective when provided to younger children compared to adolescents, although studies of both age groups are limited (Tarolla et al.).

Regarding older youth, Weathers and Liberman (1975) reported that probation violations were not reduced after parents and teens participated in family-based behavioral contracting and negotiation training covering topics such as curfews, chores, grades, and school attendance. On the other hand, Bank, Marlowe, Reid, and Patterson (1991) compared the effectiveness of a behavioral parent training with standard juvenile court practices and found that participants in the parent-training group showed greater reductions in serious crime.

Therapeutic wilderness programs. The goal of wilderness programs is to reduce delinquent behavior by providing youth with an alternative to arrest or incarceration. Wilderness program supporters believe that wilderness interventions offer at-risk youth the opportunity to be physically challenged, supported by team leaders, and unencumbered by common social forces such as alienation or fatalism (Castellano & Soderstrom, 1992). Despite the aspirations of wilderness programs, limited empirical evidence supports their use. For instance, Deschenes and Greenwood (1998) reported that a group of youth wilderness program participants reoffended at higher rates compared to a group of nonparticipants. Likewise, Lipsey and Wilson's (1998) meta-analysis indicated that wilderness programs exert weak effects on recidivism and antisocial behavior.

Peer-counseling. Peer-counseling programs have become one of the most widely used interventions in schools and juvenile correctional facilities (Tarolla et al., 2002). Peer-counseling interventions revolve around daily discussions about self-disclosure and honesty, interpersonal openness, community service, acceptance of responsibility, and modification of distorted self-image. Practitioners believe that peer-counseling is superior to traditional behavioral interventions because it is less punitive and emphasizes an emotionally supportive atmosphere oriented toward problem-solving and the promotion of positive exchanges (Brannon, Brannon, Craig, & Martray, 1989). The positive regard toward peer-counseling notwithstanding, the evidence to support it is limited, mainly because of methodological flaws (e.g., nonrandomization of control and treatment groups). Moreover, the one review of peer-counseling treatment for juvenile offenders concluded there is minimal support for its effectiveness (Gottfredson, 1987).

Boot camps. Modeled after military training, boot camps (sometimes referred to as shock or intensive incarceration programs) are short-term residential programs that focus on structure, discipline, and physical or mental challenge. The goal of boot camps is to reduce recidivism by reinforcing positive behaviors and immediately punishing negative behaviors. When in boot camps, juveniles typically spend 16 hours per day,

over 30–180 days, participating in structured activities such as drill and ceremony, manual labor, and physical training (Henggeler & Schoenwald, 1994). Evidence supporting boot camps has been based largely on methodologically flawed studies (Henggeler & Schoenwald), although Eck's (1998) congressional report indicated that four methodologically sound, random assignment studies revealed no significant difference in recidivism between youth boot camp participants and non-participants.

Summary. In sum, family/systems interventions have the most empirical support, although there are questions about whether or not the studies evaluating family/systems interventions applied rigorous methods (Latimer, 2001). There is conflicting evidence regarding whether the parent/social skills training interventions reduce recidivism and a limited number of evaluations from which to determine a relationship. Evaluations of the remaining three intervention groups (wilderness programs, peer group counseling, and boot camps) indicate that they do not reduce recidivism.

Cognitive Behavioral Therapy Interventions to Reduce Recidivism

More than any other treatment, cognitive behavioral therapy has been shown to reduce recidivism (Landenberger & Lipsey, 2005). Cognitive behavioral therapy (CBT) is one of the most extensively researched and recommended forms of psychotherapy (Butler, Chapman, Forman, & Beck, 2006; Ozabaci, 2011; Rathod & Kingdon, 2009). Pioneered by Beck (1970), CBT refers to a category of psychological interventions premised on the belief that mental disorders and psychological distress are perpetuated by maladaptive cognitions (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). According to Beck, maladaptive cognitions are general beliefs, or schemas, about the world, the self, and the future, that lead to instinctual thoughts and responses in certain situations (Hofmann et al., 2012). The goal of CBT is to eradicate the maladaptive cognitions by directly targeting symptoms, reducing distress and cognition biases (or distortions), and building effective problem-solving and coping skills (Leichsenring, Hiller, Weissberg, & Leibing, 2006; O'Connor & Creswell, 2008).

True to its name, CBT treatment components are cognitive and behavioral. Cognitive treatments employ restructuring strategies taken from social and learning theories. The goal is for patients to understand how they create meaning about symptoms, situations, and events in their lives and to understand beliefs they hold about themselves, others, and the world (Beck, 1995, 2005). Behavioral treatments, considered clinical applications of learning theory, integrate classical and operant conditioning (e.g., extinction and habituation with or without modeling). During CBT treatment, the therapist and client work together to (a) identify the relationships between thoughts, feelings, and behavior, and (b) create time-limited therapy goals, usually over 12-16 sessions held once per week (Leichsenring et al., 2006; O'Connor & Creswell, 2008). Throughout the treatment period, the client acquires psychological and practical skills (e.g., reconsiders the meaning of an event and behavioral responses to that event) while the therapist actively promotes change with an emphasis on practicing new skills and thinking patterns in between sessions. Over time, the clients attribute positive behavioral changes to their own efforts, thus enhancing self-efficacy. Outcomes of CBT vary based on factors such as treatment duration (e.g., brief vs. long term), delivery format (e.g., group vs. individual), treatment setting (e.g., clinic vs. school), and therapist characteristics (e.g., experience).

CBT and youth. CBT is widely applied to a range of clinical disorders in children and adolescents and is often considered the treatment of choice for mental health disorders in youth (Benjamin et al., 2011; O'Connor & Creswell, 2008). Unlike some therapies that are borrowed from adult treatments or downward extensions of adult treatments, many cognitive-behavioral interventions were initiated and researched with children in mind (Benjamin et al., 2011). As with CBT for adults, the goal of CBT with youth is to break the cascade of maladaptive thoughts and feelings that lie in between misattribution and destructive behavior (O'Connor & Creswell). Maladaptive thoughts and feelings include underestimating personal coping ability, anticipating distress in the face of threat, directing attention towards hostile cues, or positively appraising one's ability to perform an aggressive response (O'Connor & Creswell).

To counteract a youth's maladaptive thoughts, a CBT treatment cycle is implemented. The cycle may vary in terms of specific techniques and target symptoms, but it generally requires youth to (a) collect information about the settings, people, or events that lead them to feel anxious, aggressive or depressed; (b) identify and differentiate feelings and somatic reactions associated with the settings, people, or events; (c) articulate the anxious, angry, or depressed cognitions in settings that resemble or closely resemble anxiety, anger, or depression provoking situations; (d) use coping skills, including self-talk and relaxation, to advance past the stressful situations; and (e) reward themselves for the successful use of coping skills. Child-focused CBT may also incorporate family participation to support the child (e.g., a youth's parents model positive coping or communicate their belief that the youth can use the newly acquired skills).

CBT and its use in youth correctional settings. Over the last 20 years, several reviews have suggested that CBT results in positive outcomes for youth within correctional settings (Genovés, Morales, & Sánchez-Meca, 2006; Izzo & Ross, 1990; Landenberger & Lipsey, 2005; Lipsey, 1992; Redondo, Sánchez-Meca, & Garrido, 1999; Townsend et al., 2010), although there are questions about the rigor of some of the investigations (Townsend et al., 2010). The CBT approach in corrections settings is similar to the approach in non-corrections settings: There is a focus on images, beliefs, and attitudes and how they relate to human behavior. The difference with CBT in correctional settings is that it specifically addresses the cognitive and behavioral aspects of antisocial behavior (Armeliuss & Andreassen, 2009). In juvenile detention facilities, CBT techniques are often built around Kendall's (1993) classification of cognitive behavioral procedures for youth (modeling, building cognitive coping skills, using rewards to modify behavior, rehearsing appropriate behavior, affective education, and training tasks). Modalities built around Kendall's classifications incorporate social skills training, moral reasoning, and aggression management. These modalities may be taught through operationalized programs such as ART, the Reasoning and Rehabilitation Program, and Moral Reconciliation Therapy.

Questions remain about whether the benefits of CBT treatments persist to a greater extent than the benefits of other treatments (Ozabaci, 2011). Because CBT treatments are often provided in group settings, there are also questions about whether group settings are themselves problematic. For instance, groups may undermine youths' sense of security to open up about themselves (Mitchell et al., 2010; Townsend et al., 2010) or may facilitate peer delinquency training (Sukhodolsky, Kassinove, & Gorman,

2004). Despite these questions the literature suggests that CBT interventions can reduce recidivism, particularly if the CBT interventions involve skills training in which participants are taught actual behaviors as opposed to reminded about internal constructs that may relate to problematic behaviors (Sukhodolsky et al., 2004).

Aggression replacement training (ART). One promising cognitive-behavioral therapy intervention that addresses antisocial adolescent behavior is ART. Originally designed as an intervention for adults diagnosed with mental illness, ART evolved into an empirically validated and theoretically grounded, multimodal, psychoeducational intervention designed to prevent and reduce aggression in adolescents. ART seeks to change adolescents' thinking, emotion, and action over the course of a 10-week, 30-hour group-oriented intervention that focuses concurrently on (a) prosocial skill streaming, (b) anger-control training, and (c) moral reasoning education.

ART philosophy. Goldstein et al. (1987) developed ART based on the philosophy that aggression is a learned behavior that becomes self-perpetuating through the use of cognitive distortions and moral development delays (Palmer, 2005). The aggression, Goldstein et al. argued, originates from external (e.g., interactions with parents or peers) and internal antecedents (e.g., skill or behavior deficits). When developing ART, Goldstein et al. reasoned that the commission of an aggressive act derives from antecedents such as shortfalls in personal, interpersonal, and social-cognitive skills; the overuse of impulsive and aggressive behavior coupled with a low level of anger control; and an immature, egocentric, and concrete style of moral reasoning (Hatcher et al., 2008). The philosophy of the ART program, then, is to minimize the occurrence of aggressive acts through the promotion of skill acquisition, impulse and anger control, and moral reasoning development (Hatcher et al., 2008). Promotion of skill acquisition, anger control, and moral reasoning occurs through the three components of the ART curriculum, skill streaming (behavioral component), anger control (affective component), and moral reasoning (values component).

Skill streaming. Skill streaming is based on Bandura's (1973) social learning theory and behavior deficit model. The goal of skill streaming is to provide adolescents with a systematic, psychoeducational intervention in the form of a 50-skill curriculum about prosocial behaviors (Reddy & Goldstein, 2001). Skill streaming classes are populated by six to eight adolescents and two facilitators. The facilitators use modeling (i.e., demonstrate the behaviors), role playing (i.e., rehearse appropriate interpersonal behaviors), performance feedback (i.e., provide feedback about adolescents' skill rehearsal), and generalization training (i.e., teach the adolescents how to use skills outside the classroom setting). The curriculum incorporates beginning social skills such as starting a conversation or introducing oneself; advanced social skills such as asking for help or apologizing; intrapersonal skills such as dealing with feelings; interpersonal skill such as keeping out of fights; and planning skills such as setting priorities to solve a problem (Goldstein et al., 1987).

Anger control. Whereas skill streaming teaches adolescents what to do, anger control training (ACT) teaches adolescents what not to do (i.e., be aggressive) and how not to do it (i.e., use anger control techniques). ACT was informed by Novaco's (1975) and Meichenbaum's (1977) work on self-instructional training for anger and stress inoculation approaches (as cited in Reddy & Goldstein, 2001). During the ten-session ACT curriculum, adolescents learn a series of behavior steps to deal with provocations

or daily hassles (Session 1-6) or rehearse the full set of behavior steps (Session 7-10). The behavior steps require adolescents to identify triggers, cues, reducers, and reminders and to participate in self-evaluation. Triggers are external events and internal appraisals that provoke anger; cues are physical experiences that indicate the presence of arousal; reducers are acts or rituals that lessen anger; reminders are self-statements that further reduce arousal and replace internal triggers; and self-evaluation is a process wherein adolescents assess how well they implemented the anger control behaviors (Reddy & Goldstein, 2001).

Moral reasoning. The moral education component of ART is based on Kohlberg's (1981) six stages of moral development. Kohlberg's (1973) six stages are sequenced into the preconventional, conventional, and postconventional levels of morality. The preconventional stage is characterized by self-serving and self-preserving ends; the conventional stage by conforming and obligation to laws; and the postconventional stage by concern for social utility, public interest, justice, reciprocity, and human dignity. The least morally mature individuals focus on self-serving or self-preserving ends (preconventional), whereas the most morally mature individuals focus on principles of justice or society at large (postconventional). The goal of moral education is to facilitate adolescents' mature moral reasoning, thus helping them to think less preconventionally and more conventionally or postconventionally.

During moral education training, adolescents are exposed to a moral dilemma that is often premised on an adolescent's egocentricity. After reviewing the dilemma, the group facilitator outlines alternative actions the protagonist can follow. The facilitator then asks participants how they can respond to the dilemma, an attempt to get participants to consider the situation from different perspectives (Palmer, 2005). The discussion unfolds and cognitive conflicts emerge as youth of different moral maturities attempt to resolve the dilemma. Throughout the discussion, the facilitator uses the prosocial responses of more mature group members to model mature moral reasoning and challenge cognitive distortions (Palmer) in the attempt to elevate the moral reasoning of immature youth (Reddy & Goldstein, 2001).

Evaluations of ART. Several outcome studies have investigated the effect of ART on recidivism and antisocial behavior (Nugent & Ely, 2010). Goldstein et al. (1989) reported that youth randomly assigned to an ART program for 25 sessions were rearrested significantly less than youth who did not receive ART. In a later randomized study, Goldstein and Glick (1994) assigned 12 New York street gangs to ART for four months (six gangs) or no-ART (six gangs). Results revealed that only 13% of gang members who received ART were arrested (compared to 52% who did not receive ART) and that those who received ART demonstrated significant improvement in six skill areas. Gibbs et al.'s (1995) findings about ART were similarly positive: only 15% of group members who took ART-informed classes reoffended compared to 40% who did not. ART's effects on recidivism have also been evaluated more recently. Barnoski and Markussen (2005) reported that youth who received ART had a 16% lower felony recidivism rate compared to youth who only received juvenile court services. Likewise, Holmqvist, Hill, and Lang (2009) reported that young offenders who received ART had lower re-offense rates than young offenders who received relational-based treatment.

Several researchers have evaluated the ART program for its impact on anti-social behaviors with known correlates to recidivism (e.g., anger problems). For example,

Goldstein and Glick (1987) conducted an evaluation of ART with 60 youth participants in a limited security setting. Goldstein and Glick assigned 24 youth to an ART training course, 24 youth to a brief instruction-control condition, and 12 youth to an untreated control group. At the end of 10 weeks, the youth were evaluated to see if they acquired social skills. Results revealed that the ART participants acquired four of the ten skill streaming skills and demonstrated significantly greater changes in the number and intensity of acting-out behaviors. Even more encouraging, one year later, ART participants demonstrated significantly higher functioning in home, family, and peer contexts.

Jackson (1991) also examined ART's effect on general antisocial behavior problems, although Jackson's study site was an acute care hospital setting as opposed to a detention center (Goldstein & Glick, 1987). Jackson found that, as compared with youth who participated in traditional unstructured group therapy, youth who participated in ART showed significant reductions in anger problems and verbal aggression. A few years later, Nordarse (1997) and Nugent, Bruley, and Allen (1998) reported similar findings. Nordarse reported that ART-trained emotionally handicapped adolescents demonstrated significantly less aggression and increased prosocial behavior. Likewise, Nugent, Bruley, and Allen, in a time-series study of ART, reported that the implementation of ART was associated with a 20% reduction in daily antisocial behaviors of adolescent shelter residents. In the most recent published analysis, Gunderson and Svartdal (2006) conducted a behavior-focused outcome study of a 24-hour ART intervention on 65 children (49 males), 47 whom received ART and 18 whom received no intervention. Gunderson and Svartdal reported that the ART recipients demonstrated significant improvement in nine out of ten social skill domains compared to two out of ten domains for the comparison group; however, no effect sizes were reported.

In sum, several studies demonstrated that ART reduced antisocial behavior (Gunderson & Svartdal, 2006; Jackson, 1991; Leeman, Gibbs, Fuller, & Potter, 1991) and reduced recidivism among juvenile offenders (Barnoski & Markussen, 2005; Goldstein et al., 1989, 1994; Goldstein & Glick 1987; Holmqvist, Hill, & Lang, 2009). However, these studies were limited by small samples sizes (Gunderson & Svartdal); nonrandomization (Gunderson & Svartdal; Nugent et al., 1999); and variability in ART teacher training (e.g., highly trained ART facilitators in Gunderson & Svartdal). Finally, two of the studies extolling the benefits of ART emerged from unpublished dissertations (Jackson; Nordarse, 1997) and three others (Goldstein et al., 1989, 1994; Goldstein & Glick) were conducted by Dr. Barry Glick, the ART program developer. Despite these limitations, ART is an OJJDP-recommended program (OJJDP, 2014).

Thinking for a change (T4C). Similar to ART, T4C is an intervention to address the cognitive, social, and emotional needs of offender populations. T4C was developed by Bush et al. (1997) with grant assistance from the U.S. Department of Justice and the National Institute of Corrections in conjunction with the Wisconsin Department of Corrections (Lowenkamp, Hubbard, Makarios, & LaTessa, 2009). The intent of the grant was to develop a cognitive-behavioral program that used problem solving to teach offenders prosocial skills and attitudes. Since its development, more than 400 trainers in 80-plus agencies have trained an estimated 8,000 staff to facilitate the program in correctional settings (Lowenkamp et al., 2009).

Components of T4C. T4C is a manualized, cognitive-behavioral intervention designed to teach cognitive restructuring and cognitive skills that increase prosocial thinking and reduce problem behaviors among criminal offenders. T4C is designed for delivery to small groups over the course of 22 lessons, although there is capacity to extend the program indefinitely depending on how many skills are taught (Bush et al., 1997). Participants can be male or female, juvenile or adult, and can come from prisons, jails, community corrections, probation, and parole supervision settings (National Institute of Corrections, 2014).

The first 11 T4C lessons introduce cognitive restructuring concepts and teach social skills that support the cognitive restructuring process (Bush et al., 1997). Sample lesson topics include active listening, asking questions, giving feedback, and paying attention. During these initial T4C lessons, participants think about their beliefs, attitudes, and values and identify and remediate cognitive distortions (i.e., maladaptive ways of thinking about themselves or the world). Lessons 16-21 focus on problem solving and encourage participants to consider thinking and action options, as well as to consider the consequences associated with those options (Bush et al., 1997). Sample topics from T4C lessons include how to have a stressful conversation, how to respond to anger, and how to deal with an accusation. During the 22nd lesson, participants are asked to evaluate themselves using a skills checklist.

T4C class format. T4C classes are taught in weekly group sessions that are one to two hours in length, although the curriculum is designed to be flexible and to meet individualized program needs (Bush et al., 1997). All T4C lessons are formatted similarly. First, a T4C trainer explains the scope and reason for teaching the lesson and reminds the group that the main idea behind T4C is that humans can take charge of their lives by learning more effective ways of thinking (Bush et al., 1997). The trainer then reviews concepts and definitions relevant to the lesson. Next, the trainer describes the lesson's objectives and activities. Finally, the trainer presents the lesson's content, usually through didactic instruction and role-plays.

According to the T4C manual, T4C classes should be guided by group norms that address confidentiality, stipulate a non-violence policy, and require participants to take turns when speaking (Bush et al., 1997). The manual also details requirements for T4C trainers. For instance, the manual specifies that T4C trainers do not need to have a special credential or any required level of education. Rather, the expectation is that trainers are caring and compassionate individuals who enjoy teaching and understand interpersonal interactions (Bush et al.). The T4C manual (Bush et al.) does not specify how or whether trainers are evaluated.

Evaluations of T4C. Similar to other cognitive behavioral interventions, T4C is a popular approach that is assumed to be effective (Lowenkamp et al., 2009). This assumption is unfounded, however, because T4C has been evaluated infrequently, especially in corrections settings. Of completed T4C evaluations, several have been pilot studies conducted by T4C program developers (Lowenkamp et al.) as opposed to methodologically sound evaluations conducted by researchers without T4C affiliation (Golden, Gatchel, & Cahill, 2006). For instance, Landenberger and Lipsey (2005) conducted a meta-analytic review of 58 cognitive behavioral therapy studies, including five studies about T4C. After reviewing the T4C studies, Landenberger and Lipsey reported that T4C led to a 25% reduction in recidivism, although none of the five studies

had been published in peer reviewed journals due to short follow-up periods, lack of statistical controls, and small sample sizes (Lowenkamp et al., 2009).

Other T4C evaluations have been limited by methodological flaws as well. Golden et al. (2006) reported a trend toward reduced recidivism among adult probationers who completed the T4C program, but their study had insufficient power due to a small sample and a large number of non-completers. Similarly, Lowenkamp and colleagues (2009) determined that adult probationers in a control group were 57% more likely to be re-arrested than those in the T4C intervention group. However, Lowenkamp et al.'s sample of probationers was largely White and thus not representative of the predominantly Black and Latino prison population. With respect to T4C interventions and youth, only one researcher evaluated the impact of T4C (Main, 2003). Unfortunately, the intervention was poorly delivered: only ten youth participated and there was no measure of recidivism to examine the treatment effect. In sum, outcome data of T4C is plagued by a small and methodologically flawed body of research focused on adult populations, and a practically nonexistent body of research focused on juvenile populations.

The Present Study

Evaluations of ART and T4C within correctional settings are limited in quantity and quality (Gunderson & Svartdal, 2006; Jackson, 1991; Lowenkamp et al., 2009; Main, 2003; Nordarse, 1997; Nugent et al., 1999). Similarly, there are few evaluations of the predictors of recidivism in chronic juvenile offender populations (Loughran et al., 2009; Trulson, Haerle, DeLisi, & Marquart, 2011; Trulson, Marquart, Mullings, & Caeti, 2005). In this study, I will contribute to the limited research about ART and T4C by evaluating the effect of ART (Glick & Gibbs, 2011) and ART + T4C (Bush et al., 1997, 1998) interventions on the recidivism rates of chronic juvenile offenders. I will also contribute to the limited research about predictors of recidivism by evaluating selected variables with reported relationships to re-arrest.

The present study will address three questions. First, what is the recidivism rate of ART+T4C participants compared to ART-only participants? Second, are ART+T4C participants (higher dose of CBT) more likely than ART-only participants (lower dose of CBT) to remain in the community without re-arrest following treatment? Third, what are the relationships between the most commonly identified recidivism risk factors (i.e., prior criminal charges, parental history of criminal behavior, gang involvement, a mental health diagnosis, and number of probation violations) and crime?

CBT dosing in chronic offenders. The present study tests one of the principles of effective correctional treatment, namely that CBT is more effective with higher risk offenders and more effective when provided with increased frequency and intensity (Andrews & Bonta, 2002; Andrews et al., 1990; Landenberger & Lipsey, 2005). I hypothesized that there would be a greater reduction in the annual number of criminal charges and annual number of violent charges for ART + T4C participants compared to ART-only participants (Goldstein & Glick, 1994). I also hypothesized that the ART+T4C participants would remain in the community without re-arrest longer than ART-only participants (Barnoski & Markussen, 2005; Goldstein et al., 1994; Goldstein & Glick, 1987; Holmqvist, Hill, & Lang, 2009).

Predictors of recidivism. The third question in the present study relates to the variables that most strongly predict juvenile recidivism. In this study, I examined

several recidivism risk factors (i.e., type of prior criminal charges, parental history of criminal behavior, gang involvement, a mental health diagnosis, and number of probation violations). I hypothesized that participants with these risk factors would be more likely to re-offend than participants without them (Caldwell & Van Rybroek, 2005; Cottle et al., 2001).

Method

Participants

The study participants ($N = 156$) were minors and young adults who completed an in-custody treatment program (9–24 months in length, $M = 17.2$ months) administered in a county juvenile detention facility in the Western United States. All participants were male, 19 to 23 years of age, and were currently, or had been, under the supervision of a Western state's county probation department. The study participants were composed of ART-only participants ($n = 90$) and ART+T4C participants ($n = 66$). ART-only participants were in treatment for a slightly shorter period ($M = 17.1$ months, $SD = 5.7$) than ART+T4C participants ($M = 17.2$ months, $SD = 6.2$). According to probation reports, 58% of study participants identify as African American ($n = 91$), 25% as Latino ($n = 39$), 9.6% as European American ($n = 15$), 2.6% as Multi-ethnic ($n = 4$), 1.9% as Unknown ($n = 3$), 1.9% as Pacific Islander, and .6% as Asian ($n = 1$). Data for participants for this study were obtained as a de-identified dataset for secondary data analysis. The data are being collected for longitudinal evaluation of a treatment program for youthful offenders and have been used for institutional program reports.

Measures

The measures employed in this study include arrest records, covariate and sociodemographic data. These data were abstracted from probation disposition records which were completed prior to adjudication to the treatment program.

Youths' arrests. Records of youths' arrests were obtained from reports of the California Law Enforcement Telecommunications System (CLETS). CLETS is a high-speed message switching system that provides law enforcement agencies access to various databases and the ability to transmit and receive administrative messages. The CLETS database contains youths' civil and criminal charges and is cumulative, so a juvenile's full record (arrests, petitions, and convictions) is reviewable. The vast majority of arrest and court entries in the CLETS are based on fingerprinting occurrences (Department of Children and Family Services, Los Angeles County, 2014).

Youths' participation in ART or ART + T4C. Data regarding youths' participation in ART or ART + T4C interventions were collected from class rosters. The class rosters are managed by probation staff members who record the names of class participants at the end of each ART or T4C class. For many classes, notes about participants' level of engagement were also available.

Recidivism risk factors. All socio-demographic and covariate data (i.e., type of prior criminal charges, parental history of criminal behavior, gang involvement, a mental health diagnosis, and number of probation violations) were extracted from official probation reports. Probation reports inform the courts about a multitude of issues regarding the youth and serve as the basis of the court's findings and orders. Social, psychological, and health-related data contained in probation reports help the courts make decisions regarding a youth's safety, permanency, well-being, and successful

transition to living independently as an adult (California Center for Families, Children & the Courts, 2012).

Procedure

The de-identified dataset was obtained from two researchers who are conducting a longitudinal evaluation of the county treatment programs for youthful offenders. The researchers abstracted the data from disposition and CLETS reports. They also reviewed ART and T4C program files to assess intervention fidelity and determine youth participation. Sixty of the youth who participated in T4C have already consented to record review; two did not grant consent.

Researchers organized CLETS data into the following categories: total number of arrests, total number of charges, number of violent charges, property charges, drug charges, substance related charges, issuance of a restraining order by an intimate partner/former partner, gang-related charges or enhancements, weapons-related charges or enhancements, and vehicle code citations. Murder charges and the total number of felonies, misdemeanors, and probation violations were also noted. Additionally, the date of first re-arrest, date of first violent re-arrest, and date of CLETS report issuance were recorded.

Participants who took ART classes were placed into the ART-only group whereas participants who took both ART and T4C classes were placed into the ART+T4C group. Researchers organized covariate data into the following categories: demographics, foster child status, Department of Juvenile Justice (DJJ) commitment or acceptance following referral, history of parental arrest, parental crime type, parental employment, current enrollment/attendance in school, special education status, employment status, gang affiliation, psychiatric diagnosis, substance use/abuse, race, Juvenile Assessment and Intervention System (JAIS) risk score, and history of prior placement in juvenile detention or out-of-home placement. For details regarding how data were coded, please refer to the Appendix. All data extracted from CLETS reports, ART and T4C rosters, and probation reports were de-identified and stored in a password protected Excel file. An institutional review board affiliated with the researchers' university approved the study procedures.

Results

Results indicated that ART-only and ART+T4C participants had the same age at first arrest ($M = 14$, $SD = 2.1$) and the same number of prior juvenile hall commitments ($M = 5$, $SD = 4.9$). ART-only participants entered the program with a similar number of prior charges ($M = 8.2$, $SD = 6.6$) as ART+T4C participants ($M = 8.0$, $SD = 6.6$), although the breakdown of charges differed slightly between groups. Fifty-nine percent of ART-only participants entered with violent charges compared to 47% of ART+T4C participants. On the other hand, 29% of ART+T4C entered the treatment program with weapons charges compared to 21% of ART-only participants, although ART-only participants accrued slightly more weapons charges per-person ($M = .57$, $SD = 1.1$) than ART+T4C participants ($M = .50$, $SD = 1.1$). Table 1 provides a comparison of offense variable means and standard deviations by group (all participants, ART-only participants, and ART+T4C participants). The descriptive data in Table 2 indicates that a larger portion of ART+T4C participants had been in foster care, referred to DJJ, and had a father or dual-parent history of arrest. A larger portion of ART-only participants had an unemployed parent and entered treatment with violent charges. There was a high

prevalence of substance abuse among participants in both groups.

Recidivism Rate of ART+T4C Participants Compared to ART-only Participants

One aim of this study was to compare recidivism rates between the ART+T4C treatment participants and ART-only treatment participants, specifically comparing the number and type of criminal charges for each group of participants. Recidivism rates were calculated for any type of arrest event, for felony events, and for violent events. Independent *t*-tests were used to compare the two groups' recidivism rates for each category of arrest event. Results indicated that ART+T4C participants were arrested an average of once post-release, $M = 1.17$, $SD = 1.94$, and ART-only participants were arrested an average of three times, $M = 3.44$, $SD = 3.29$. The *t*-test analyses depicted a variable distribution that was positively skewed with a large effect size ($d = .80$). These results indicated a statistically significant difference between arrest rates, although, keeping with data in the corrections field (Vaughn, Pettus-Davis, & Shook, 2012), the results were non-normal ($p > .05$). A log transformation did not correct non-normality. Thus, a non-parametric test, the Mann-Whitney test, was used. The Mann-Whitney test ($U = 1481.5$, $p < .001$) resulted in a medium effect size ($d = .44$) and indicated that ART-only participants experienced significantly more post-release arrests ($M = 2.48$) than ART+T4C participants ($M = .42$).

Felony and violent events were also non-normally distributed, justifying the use of the Mann-Whitney tests to compare recidivism rates between the ART-only and ART+T4C groups. For felony events, the Mann Whitney test ($U = 1958.5$, $p < .001$) resulted in a medium effect size ($d = .32$) and indicated that ART+T4C participants sustained an average of 63 felony charges post-release compared to 89 sustained by ART-only participants. Regarding violent events, the Mann Whitney test ($U = 2212.0$, $p < .01$) resulted in a small effect size ($d = .25$) and indicated that ART+T4C participants sustained a mean of 67 violent charges compared to 87 sustained by the ART-only participants. These results suggested that the ART+T4C treatment combination was more effective. However, an analysis of the mean offenses for ART+T4C participants versus ART-only participants was not appropriate because the variable of interest was number of arrests post-treatment without accounting for time. Since ART-only participants had been in the community post-treatment for a longer period of time, they had more opportunities to be arrested than ART+T4C participants.

The failure of the independent *t*-tests to reliably compare the number of post-treatment arrests in ART-only versus ART+T4C participants warranted the use of another analysis to provide information about the number of arrests post-treatment. For this reason, a non-parametric paired sampled *t*-test, the Wilcoxon Signed Ranks Test, was used. The variables in the Wilcoxon analysis were pre- and post-treatment arrests for felony and violent charges among all 156 participants. The Wilcoxon Signed Ranks Test provided median arrest levels for both violent and felony arrests and indicated that, for the entire sample, there were differences in violent and felony charges before and after participation in the treatment program. Specifically, the median number of violent charges dropped from 1.2 ($SD = 1.4$) to .8 ($SD = 1.24$) before and after treatment, respectively. Likewise, the median number of felony charges dropped from 2.4 ($SD = 2.0$) to 1.3 ($SD = 1.8$) before and after treatment, respectively.

Time to Re-arrest for ART+T4C Participants Compared to ART-only Participants

One of the main goals of this study was to compare recidivism activity (any re-

arrest) between ART-only and ART+T4C participants. To achieve this goal, survival analysis was used. Survival analysis has three advantages over independent *t*-tests when examining a population of juvenile offenders. First, survival analysis considers the differential effects of the timing of arrest (Ryan & Yang, 2005). Second, survival models account for censored data such as different custody entry or exit dates or whether certain participants were never arrested (i.e., survived, Burraston, Cherrington, & Barh, 2012). Finally, survival analysis allows for examination of both desistance (in the form of survival to the end of the follow-up period) and differences between delayed and immediate return to crime (DeJong, 1997). In the present study, the differential effects of timing mattered because administrators wanted to know not just if, but when, youth re-offended. Likewise, variable exit and entry dates were important to consider since ART-only participants were released into the community earlier than ART+T4C participants.

Figure 2 depicts the survival function for ART-only and ART+T4C participants. The curve is significantly different across portions of the beginning, middle, and end, as measured by the Breslow, Tarone-Ware, and log-ranks tests (Tarone & Ware, 1977). The difference is first clearly depicted around Day 300 post-release when approximately 45% of ART-only participants had been arrested compared to 35% of ART+T4C participants. The difference becomes more apparent by day 500 when 80% of ART-only participants had been arrested compared to 40% of ART+T4C participants. These data provide a statistically significant defense that participants in the ART+T4C treatment program are likely to remain in the community longer without re-arrest than ART-only participants.

Relationships Between Covariates and Time to Re-arrest

The third aim of this study was to assess the predictive utility of a select group of covariates with regard to time to re-arrest. A Kaplan Meier survival curve was used to assess time to re-arrest for re-offenders and time since release for non-offenders (Kaplan & Meier, 1958). The covariates included in the analysis were mental health diagnosis, history of parental arrest, gang involvement, violent, felony, and weapons charges, and probation violations.

Mental health diagnosis and parental arrest variables were transformed from categorical to dichotomous variables for analysis. Conduct disorder and substance abuse diagnoses were not included in classification since virtually all participants entered the program with those diagnoses. Figure 3 demonstrates that youth with mental health diagnoses were re-arrested more quickly, but the difference in time to re-arrest between those with and without a diagnosis was not statistically significant. Parental arrest did not predict a significantly faster time to re-arrest (Figure 4), nor did gang involvement (Figure 5).

Subsequent analyses determined the degree to which violent, weapons, or felony charges and probation violations predicted time to re-arrest. Violent charges significantly predicted faster time to re-arrest ($p < .05$) although not in the direction hypothesized. Figure 6 indicates that those who entered treatment with non-violent charges were likely to be re-arrested faster than those who entered with violent charges. This finding was significant at all points along the curve. Felony and weapons charges, as seen in Figures 7 and 8, respectively, did not significantly predict re-offending. Probation violations were the final variable assessed. As depicted in Figure 9, pre-

treatment probation violations did not significantly predict re-offending at any point along the curve ($p > .05$). In sum, none of the variables significantly predicted re-offending.

Discussion

The goal of the present study was to answer three questions. First, what was the recidivism rate of ART+T4C participants compared to ART-only participants? Second, were ART + T4C participants more likely to remain in the community without arrest than ART-only participants following treatment? Third, did covariates with known relationships to recidivism predict re-arrest? Results indicated that the recidivism rate for the ART-only group was higher than it was for the ART+T4C group, although the latter group had been released from custody for a shorter time. Subsequent survival analyses controlling for the different release dates indicated that ART+T4C participants demonstrated lower recidivism rates than ART-only participants.

A Kaplan Meier survival curve assessed time to re-arrest for re-offenders and time since release for non-offenders controlling for covariates. Results indicated that mental health diagnoses, history of parental arrest, gang involvement, felony, violent and weapons charges, and probation violations did not predict faster time to arrest. Interestingly, the Kaplan Meier analysis indicated that non-violent charges pre-treatment predicted post-treatment re-offending. These findings are discussed below. Recommendations based on the present study's results are presented after the conclusion.

ART+T4C vs. ART-only

The first two goals of the present study related to understanding the reoffending activity of ART and ART+T4C participants. Results indicated that across the survival curve ART+T4C participants were less likely to be re-arrested than ART-only participants. The difference between the group outcomes was clearly depicted at day 300 when there is a 10% point difference for ART+T4C, increasing to a 40% difference in re-arrest rates at day 500.

A higher dose of CBT was associated with better outcomes. The lower recidivism rates among this study's ART+T4C participants are consistent with the literature indicating that CBT reduces recidivism. Large systematic reviews (Lipsey, Landenberger, & Wilson's, 2007) and other studies (e.g., Landenberger & Lipsey, 2005; Lipsey, Chapman, & Landenberger, 2001; Lipsey & Landenberger, 2006; Miles, Ellis, & Sheeran, 2012; Pearson, Lipton, Cleland, & Yee, 2002; Wilson, Bouffard, & MacKenzie, 2005) have repeatedly indicated that CBT reduces recidivism. In this study, ART+T4C participants re-offended half as often by day 500 compared to ART-only participants. This rate reflects Lipsey et al.'s (2007) reported 25–50% decrease in participant re-offending within the first 12 months post-CBT intervention.

The lower recidivism rates among this study's ART+T4C participants are consistent with Andrews et al.'s principles of effective correctional treatment (Andrews & Bonta, 2002; Andrews et al., 1990). These principles stipulate that lower reoffending rates occur once high-risk offenders receive intensive services premised on cognitive behavioral and social learning approaches. In this study, ART+T4C participants received more than 20 extra sessions of group cognitive behavioral therapy compared to ART-only participants. The successes associated with the extra 20 sessions are consistent with the psychotherapy outcome literature indicating a positive relationship

between the number of therapy sessions received and the amount of improvement within clients (Bateman & Fonagy, 1999; Glenn et al., 2013; Hansen, Lambert & Forman, 2002; Orlinsky, Grawe & Parks, 1994; Steenbarger, 1994). Granted, the literature does indicate a point of diminishing treatment returns (Howard, Kopta, Krause, & Orlinsky, 1986), although this is seen more often in symptom distress (e.g., panic) than in the domain of interpersonal skill deficits. Altogether, it is likely that ART+T4C participants reoffended less quickly and less often because they developed better problem solving skills as a result of being exposed to more hours of CBT treatment.

T4C curriculum is more aligned with offender needs. It is also possible that the lower recidivism rates among ART+T4C participants were less a function of treatment quantity and more a function of treatment content. Indeed, there are studies indicating that larger treatment dosage is not predictive of better outcomes in youthful offenders (Armstrong, 2003), substance abusers (Covi, Hess, Schroeder, & Preston, 2002), or those at risk for suicide (Norrie, Davidson, Tata & Gumley, 2013). Treatment content could have led to lower recidivism rates among ART+T4C participants because unlike ART, the T4C curriculum is premised only on cognitive restructuring, social skills training, and problem solving techniques. There is no curricular strand associated with moral reasoning or moral development, thus freeing teaching personnel to focus exclusively on specific antisocial cognitions or interpersonal skills (e.g., beliefs about violence).

Research indicates that treatments focused on antisocial cognitions and interpersonal skills benefit youthful offenders the most. For instance, meta-analyses (Gendreau et al., 2000; Lipsey, 1999) and outcome evaluations (Golden, Gatchel, & Cahill, 2006; Ross, Fabiano, & Ross, 1988) indicate that emphasis on interpersonal skills (e.g., active listening) is associated with increased program effectiveness. In addition, researchers argue that criminal justice personnel are more comfortable teaching concrete interpersonal skills than guiding offenders through the moral reasoning process (Armstrong, 2003). Thus, it is possible that the ART+T4C participants may have benefitted from additional practice in identifying and amending deficient interpersonal skills that are known risk factors for criminal behavior (Andrews & Bonta, 2002). ART+T4C participants may also have benefitted from more effective teaching practices that occurred as a byproduct of probation staff feeling more comfortable and competent when teaching interpersonal skills.

Predictors of Re-offending

The third goal of this study was to learn whether covariates with reported relationships to recidivism predicted re-arrest in the ART-only and ART+T4C participants. Covariates included in the Kaplan Meier analysis were mental health diagnosis, history of parental arrest, gang involvement, violent, felony, and weapons charges, and probation violations. Contrary to the literature, results indicated that none of the variables predicted faster time to arrest. As is often true in research, non-significant or aberrant findings are important and this study's findings are no exception (Minor et al., 2008).

The inability of the variables in the present study to predict re-arrest may not be as surprising as originally thought given that there are only a limited number of investigations on the predictors of juvenile re-offending (Chang, et al., 2003; Trulson et al., 2005; Trulson et al., 2011), particularly for serious, chronic offenders (Trulson et al.,

2011), and given that completed investigations report inconsistent results (Chang et al.; Minor et al., 2012). Additionally, many of the variables found in the literature are dichotomous and were collected for agency-use, as opposed to precisely defined (e.g., violent charges versus number of weapons charges) and collected for research analysis (Trulson et al., 2005) as was the case for most of the variables in the present study. Finally, effect sizes reported in the literature are small to moderate and suggest the need for researchers to examine other contributors to re-arrest (Cottle et al., 2001).

Mental health diagnosis. Results of the present study indicated that there was no significant difference between the time to re-arrest for youth with a mental health diagnosis and youth without one. This finding is inconsistent with studies that indicated mental health diagnoses predict recidivism (Asscher et al., 2011; Basque, Toupin, & Côté, 2012; Cottle et al., 2001; Leistico et al., 2008; Trulson et al., 2005). One reason for the inconsistency may be that the participants in past studies were different from the participants in the present study. For instance, Basque et al.'s study was premised on disproportionately Caucasian participants' self-reported re-offending and Trulson et al.'s was premised on female participants and a five-year follow-up period. Likewise, Cottle et al.'s meta-analysis included participants from outside correctional facilities and Simourd and Andrews' investigation (1994) included first-time offenders. In contrast, participants in the present study are disproportionately non-Caucasian, male chronic offenders who were held inside a maximum security detention facility and whose re-offenses were recorded based on CLETS reports (not self-reports).

Another reason that may explain why the present study's findings do not reflect the literature is because the literature contains overstated relationships between mental health diagnosis and re-offending. For instance, some studies reported that mental health diagnoses predict re-offending despite only modest effect sizes (Asscher et al., 2011; Leistico et al., 2008). A final reason for disparities between the present study's results and the literature is that the present study classified mental health diagnosis into a dichotomous variable, thereby making it impossible to conclude whether psychopathy, the variable most often linked with recidivism (Asscher, et al., 2011; Dembo et al., 2008; Taylor et al., 2009), specifically predicted recidivism more than any other mental health diagnosis or lack of diagnosis (e.g., depression).

Thus, this study may be less in conflict with previous investigations than it is different from those investigations in terms of participants and methods. Moreover, the present study's results are comparable to results from some previous investigations into how or whether mental health diagnosis predicts re-offending. For example, the present study's results are similar to those of a longitudinal study (Edens et al., 2007) and a meta-analysis (Guy et al., 2005) that indicated mental health diagnosis (psychopathy) did not significantly predict violent re-offending in ethnically heterogeneous groups such as those seen in the ART and ART+T4C cohorts.

Parental history of arrest. Results of the present study indicated that parental history of arrest did not significantly predict a faster time to re-arrest. This finding contrasts with the literature indicating that parental history of arrest predicts youth criminal behavior (Farrington, 1989; Farrington et al., 2001; Fergusson et al., 2000; Huesmann et al., 2002; Murray & Farrington, 2005; Murray et al., 2007; Robins et al., 1975; West & Farrington, 1977). A closer look at this literature, however, reveals several limitations that complicate comparisons with the present study. These

limitations include class bias, old data, small sample sizes, data contamination, vague rating scales, reliance on self or family-reports of arrest, and, perhaps most relevant, a failure to examine how history of parental arrest affects re-offending in chronic juvenile offenders.

Regarding class bias, Huessman et al., (2002), Murray and Farrington (2005), and Fergusson et al., (2000) studied middle-class, Caucasian offenders as opposed to lower socioeconomic status, minority offenders that compose most of the US juvenile justice system population (Rovner, 2014) and the population investigated in the current study. With respect to old data, Farrington's (1989) and Murray et al.'s (2007) data was based on the experiences of young children and adolescents in the 1950s and 1960s, respectively. It is questionable whether data about the experiences of youth from more than half a century ago was useful for understanding youth today.

Studies with small sample sizes (e.g., $N = 40$, Murray & Farrington, 2005) are also used to support the claim that parental criminality predicts youthful delinquency. The problem is that the small sample sizes reduce the reliability of these studies' findings. Self-reported arrest data (Farrington et al., 2001; Fergusson et al., 2000) muddles the literature as well. Self-reported data can contain exaggerated reports about the number or nature of arrests (Brame et al., 2004; McCord et al., 2001) and can in turn lead to an over-estimation of the relationship between parental criminality and youth delinquency. A final problem with the literature is that it contains contaminated data and vague rating scales. For instance, in one study the authors were aware of interviewees' arrest records prior to conducting interviews, thus creating the possibility for confirmation bias to influence interviews (West & Farrington, 1977). These same authors also used a rating scale with a range of antisocial behaviors, some illegal and others not, to indicate parental criminality.

In summary, many studies have argued that there is a relationship between parental criminality and youthful offending. However, many of these studies are old or methodologically flawed. Moreover, there are studies that have argued for the absence of a relationship between parental criminality and youthful offending (Moffit, 1987). Of most relevance to the present study, however, are not the methodological flaws or outdated nature of past studies, but the lack of investigations evaluating the impact of parental criminality on the re-offending patterns of chronic, youthful offenders such as those who participated in ART and ART+T4C. Only Fergusson et al. (2000) attempted to assess a chronic offender population, although their work was undermined by data gaps and involved youth from another national context, New Zealand.

As stated, the findings of the present study are different from past investigations, limited as they are. With this in mind, there are two more explanations for these differences. First, it is possible that the ART-only and ART+T4C participants could have been behaving antisocially before their parents exhibited criminal behavior. Second, it is possible that the effects of parental criminality had not been strongly transferred or had worn off in the present study's older adolescent population (Moffit, 1987).

Gang involvement. Results of the present study indicated that gang involvement did not significantly predict a faster time to re-arrest for ART-only and ART+T4C participants. These results were surprising in light of the fairly robust body of literature indicating a relationship between gang affiliation and recidivism (Archwamety &

Katsiyannis, 1998; Caudill, 2010, Katsiyannis, & Archwamety, 1997; Lattimore et al., 2004), including among serious offenders such as those evaluated in the present study (Benda et al., 2001a, 2001b; Huebner et al., 2007; Trulson et al., 2005). In the present study, it is possible that gang affiliation did not reach significance in predicting re-arrest because of the over or underestimation of gang affiliated participants and the inter-correlation between peer delinquency and gang involvement.

First, probation reports may have inaccurately classified gang members as non-gang members. This could be due to personnel recording errors (Vaughn, Pettus-Davis, & Shook, 2012) or participant misrepresentation of gang status. The latter circumstance may have occurred because arrested youth did not wish to disclose gang status due to fear of sanctions (e.g., California gang enhancements). Regardless of the reason behind potential misclassifications, it is possible that participants who were actually gang members were analyzed as non-gang members. Thus, it is possible that there was an underestimation of the number and timing of offenses committed by actual gang members.

Of course, overestimation of the number of gang members was also possible. Specifically, participants classified as gang members upon commitment to the treatment program may have desisted from the gang while in the program due to contemporary life variables such as family commitments (Vigil, 1998). Still others may have exaggerated their gang involvement for peer approval or other reasons. In both instances, the participants would have left the program unaffiliated with a gang yet classified as a gang member in the present analysis. Thus, analyses could have been based on an artificially inflated number of gang members that led to an overestimation of the number of gang member offenses (and underestimation of non-gang member offenses).

Another reason that gang affiliation failed to predict recidivism may be because gang affiliation is highly inter-correlated with peer delinquency involvement (Sampson, 1986). Based on this premise, it may be that some re-arrests occurred or occurred more quickly because of ART-only or ART+T4C participants' interactions with anti-social peers, regardless of those peers' gang affiliation. This is a plausible scenario because ART-only and ART+T4C participants were chronic offending, antisocial gang and non-gang affiliated young men who socialized with each other on a daily basis. Upon re-entering the community then, it is possible that these young men sought out familiar, antisocial peers regardless of those peers' gang affiliation. In turn, spending time with antisocial peers may have activated the group hazard phenomena (Erickson, 1971) wherein groups of antisocial youth received the attention of law enforcement and potentially increased their odds of being arrested.

Certainly the under- or overestimation of gang members and the inter-correlation between peer delinquency and gang affiliation could explain why the results of this study deviate from the literature. Another explanation is that gang involvement does not actually predict re-arrest (Brownfield et al., 2001; Lattimore et al., 1995; Minor et al., 2008). Still another is that some studies indicating a relationship between gang affiliation and recidivism are based on convenience samples (Benda et al., 2001a), female-only participants (Archwamety & Katsiyannis, 1998), and recidivism defined as recommitment instead of re-arrest (Katsiyannis & Archwamety, 1997). In contrast, participants in the present study were court-mandated males and recidivism was defined as re-arrest.

Offense history variables. Prior research suggests that criminal history variables predict reoffending (Dembo et al., 1998; Lattimore et al., 2004; McMackin et al., 2004; Myner et al., 1998; Trulson et al., 2011; Weibush et al., 2005), although the effect sizes are generally small (Cottle et al., 2001). Results of the present study indicated that violent charges predicted faster time to re-arrest, although not in the direction hypothesized. Weapons and felony charges did not predict faster time to re-arrest, possibly because not enough participants fit the non-felony category or were re-arrested for weapons possession. Likewise, probation violations did not significantly predict re-arrest.

Violent charges. Results indicated that compared to violent charges, nonviolent charges predicted faster time to re-arrest at all points on the survival curve. These results offer evidence that youth who entered the program with less serious charges were arrested faster than those who entered the program with more serious charges. One explanation for this result is peer delinquency training (aka peer deviancy training), or a process when aggressive, antisocial behavior is taught or modeled by peers. Peer delinquency training can take place in the context of many environments including juvenile detention facilities where youth are contained for weeks, months, or even years.

In the present study, ART-only and ART+T4C participants were held on the same unit for 12 months, on average, and took all treatment classes in group formats. Thus, participants were provided with an environment conducive to peer training, deviant or otherwise. The existence of such training within correctional settings has been documented in group therapy and in unstructured, recreation contexts. In group therapy contexts, such as the ones evaluated in the present study, researchers have argued that participants' deviant behavior can increase rather than decrease. For instance, Dishion, McCord, and Poulin (1999) reported that peer-group interventions increased adolescent problem behavior and negative life outcomes in adulthood, compared with control youth. Peer delinquency training has also been demonstrated in children as young as preschool age (Snyder, West, Stockemer, Givens, & Almquist-Park, 1996) and is known to increase when youth of mixed backgrounds are put into the same groups (Boxer, Guerra, Huesman, & Morales, 2005; Mager, Milich, Harris & Howard, 2005).

In the present study, ART-only and ART+T4C participants entered the program with a range of offenses, some violent and others nonviolent, yet were all put into the same residential unit and the same rehabilitation classes. Thus, it is possible that peer deviancy training occurred between nonviolent and violent offenders, with the latter participants influencing the former to engage in novel antisocial behaviors upon release. Whether or not peer delinquency training explains why nonviolent ART-only and ART+T4C offenders were re-arrested more often and more quickly, it is important to note that the consequences of possible intra-unit peer delinquency training are the product of complex interactions between the developmental stages of the ART-only and ART+T4C participants, the informal and formal interactions of those participants, the skill of treatment program instructors, and the context of services (Dishion et al., 1999).

Felony and weapons charges. Results of the present study indicated that felony and weapons charges did not significantly predict re-offending. These results are inconsistent with the literature indicating that offense history variables are strong predictors of re-arrest (Cottle et al., 2001; Lattimore et al., 2004; Marczyk, Heilbrun,

Lander, & DeMatteo, 2003; McMakin et al., 2004), including literature that specifically demonstrates a relationship between prior weapons (Trulson et al., 2011) and felony charges (Trulson et al., 2005; Weibush et al., 2005) and re-arrest. Given the fairly robust evidence that offense variables predict re-arrest, including in adult samples (Hall, Miraglia, Lee, Chard-Wierschem, & Sawyer, 2012), it is possible that the present study's results were affected by sampling error. As discussed, sampling error occurred in the present study because there were not enough offenders with non-felony ($n = 83$) or weapons charges ($n = 48$) to reliably compare with offenders who entered the treatment program with felony and non-weapons-related charges.

The small number of participants with weapons-related arrests was surprising because the CLETS reports indicated that ART-only and ART+T4C participants were arrested for weapons charges more than any other type of charge. Analysis clarified that there were indeed a large number of weapons charges, however, the charges were concentrated within a small group of ART-only and ART+T4C participants. The substantial number of weapons charges divided among a small group is likely a function of California's weapons laws. Specifically, a single weapons-related arrest can lead to a multitude of weapons charges (e.g., simple possession, carrying a concealed weapon, improper handling of a firearm in a motor vehicle, possession of a weapon by a convicted felon, possession of an assault weapon). In the context of the present study, the large number of pre-treatment weapons charges was not evenly distributed across participants. Instead, the weapons charges ($n = 78$) were sustained by a relatively small number of participants ($n = 48$), including six participants who had four or more weapons charges. As a result, analysis of time-to-arrest was affected because the model included only a small number of participants with weapons-related charges.

Sampling error also prohibited proper analysis regarding whether felony charges predicted re-arrest. Sampling error occurred because the number of young men entering the treatment program with felony charges ($n = 117$) outweighed the number of men entering with non-felony charges ($n = 39$). This is likely a function of the treatment program's objective to treat chronically offending youth who have been arrested multiple times and, after so many arrests, had a higher likelihood of incurring a felony charge.

Probation violation. Pre-treatment probation violations did not predict post-treatment re-offending. This relationship may have failed to reach significance for two reasons. First, ART-only and ART+T4C participants may have differed in the nature of their pre-commitment probation violations. Second, ART-only and ART+T4C participants' pre-commitment probation violations were subject to the discretion of probation officers.

Probation is the oldest and most widely implemented community-based corrections program (OJJDP, 2003). Probation is used for first-time, low risk offenders and for more serious offenders such as those evaluated in the present study. Given the widespread use of probation for different classes of offenders, probation terms can be extensive for some offenders and minimal for others. In the present study, it is likely that all pre-commitment ART-only and ART+T4C participants were subject to probation terms such as appearing at scheduled court dates and reporting for probation appointments. A subset of participants may have been required to participate in drug testing, drug counseling or community service. Still others may have been required to

spend weekends in confinement at a local detention center or to abstain from visiting certain people or places without permission.

For the purposes of analysis in the present study, all types of probation violations were recorded. Thus, one ART-only or ART+T4C participant could have been charged with a probation violation due to missing a court date while another could have been charged for a probation violation related to selling drugs or socializing with known gang members. In the former example, the missed court date could have been a function of insufficient transportation or executive functioning skills, whereas in the latter example, the drug selling or gang affiliation could be an indication of the re-emergence of antisocial behavior patterns. Consequently, probation violations in the present study may have failed to predict re-offending because the nature of ART-only and ART+T4C participants' probation violations varied from technical to criminal violations, each corresponding to different levels of risk for re-arrest. Future researchers can provide clarity in the literature by examining youthful offenders with similar types of probation violations.

As discussed, pre-treatment ART-only and ART+T4C participants may have been cited for probation violations based on range of behaviors. These behaviors were supervised by probation officers, each of whom exercised discretion regarding when to issue a probation violation. Like other officials in the criminal justice system—police, prosecutors, judges, defense attorneys, and correctional officers—probation officers use their discretion when providing community-based supervision (Jones & Kerbs, 2007). Factors that may affect their discretion include philosophical orientations to criminal justice goals (e.g., social welfare v. social control orientations, rehabilitation versus retribution) and scholarly interpretations of the law. Organizational factors (e.g., belief that high revocation rates imply an officer is unable to handle cases), caseload types and sizes, personal preferences or biases, and the use of mandatory risk and needs assessments may also affect probation officer's decision-making. In addition, offense history variables can influence probation officer discretion (Kerbs, Jones & Jolley, 2009).

In the present study, pre-treatment ART-only and ART+T4C participants may have been subjected to different supervision styles, some more prone to issuing violations than others. It is possible then, that one ART-only or ART+T4C participant could have committed an infraction that yielded a warning while another participant, committing the same infraction, could have been arrested. Over the course of years, the latter youth may have incurred many probation violations, whereas the former youth may not. Despite how both youth were committing similarly deviant behavior and may have had similar odds for future re-arrest, the Kaplan Meier analyses would fail to indicate that re-arrests were a function of probation violations.

Limitations

Although the current study contributes to the literature on juvenile recidivism and cognitive behavioral therapy based interventions for juvenile offenders, there are several limitations that must be considered when evaluating these findings. First, there were threats to external validity. One obvious threat is that there was no comparison or control group for the entire sample. This is because the court is not amenable to randomization of youth to treatment/control groups and a non-equivalent comparison group dataset was not available. A second external validity threat was that youth were

sentenced to the treatment program based on the discretion of judges whose sentencing decisions are subject to variation. A third threat to external validity was that youth participants were mandated to treatment regardless of cognitive or psychological abilities. Thus, youth with disabilities may not have had the skills (e.g., processing or mood regulation) to fully participate in required treatment classes.

Investigators involved in the present study adopted strategies to deal with most of these threats. For example, investigators took advantage of a natural experiment to compare cohorts that received one CBT intervention to cohorts that received two CBT interventions. Second, investigators collected covariate data about youths' psychological functioning, including special education designation and mental health diagnoses. The covariate data allowed investigators to evaluate the homogeneity of the sample and to account for significant confounders and treatment interferences. Unfortunately, the present study's research team was not able to address jurisdictional variation in sentencing practices.

This study was also limited by internal validity threats. First, there was selection bias because participants were court-assigned (non-randomly selected) to the treatment program. Second, participants who were in custody when T4C was added to the treatment curriculum had to remain in custody for a lengthened time period as remanded by the court. This change could not be analyzed as an independent variable since it correlated with the T4C intervention. Third, there were instrumentation issues with the probation records. Specifically, some probation officers were more thorough record-keepers than others and therefore some reports contained more detail than others. A final internal validity threat, related to construct validity, is that official records were the only source of data about re-arrest. Although official records provide specific data about offenses and most knowledge about criminal careers is derived from official records of arrests, court referrals, or convictions (Farrington, 1997), they capture only a small fraction of the true number of offenses committed (Farrington, Jolliffe, Hawkins, & Catalano, 2003). Accordingly, it is possible that the data collected in the present study under-represented participants' criminal participation. The present study's investigators addressed these internal validity threats by collecting covariate data so that the ART-only and ART + T4C groups could be compared and by consulting with probation staff when probation records provided insufficient information.

Future Research

A literature review clarifies what we do not know and provides a sound basis for planning future studies (Wilson, Mitchell, & Mackenzie, 2006). As indicated in the present study's literature review, additional high-quality studies are needed to examine CBT programming for chronic juvenile offenders. After conducting the present study, I am more ardent in this belief. In fact, I think future studies should use both official and self-reports for data collection, move from within-group to within-person analyses, employ random assignment, and more closely examine the impact of mental illness on CBT participation.

First, investigations should measure re-offenses as indicated in official court reports and self-reports. Official court reports include the dates of all arrests and may include more information about serious offenders' criminal activities, yet they may under-report the minor offenses which signal a return to criminal thinking. On the other hand, self-reports capture a larger portion of the true number of offenses committed,

including minor offenses, although they may be affected by memory lapses or concealment tendencies. Given the strengths and weaknesses of each type of report, researchers should use both types (i.e., official and self-reports) so they receive more comprehensive information about re-offending behavior (Farrington, Jolliffe, Hawkins, & Catalano, 2003; Heide & Solomon, 2003).

In addition to collecting data from official and self-reports, researchers should move from within-group analysis to within-person analysis. The current investigation compared the success of young men who were embedded into one of two groups. Although sociodemographic data was collected on each young man and assisted in understanding who re-offended and when, there was nothing that explained the basis of the causal relationship (i.e., how did the CBT treated youth go from offending to not offending?). Accordingly, future investigations should be more longitudinal in nature and use within-person, temporal and outcome design components that identify what thinking or behavior patterns led to re-offending (Burraston, Cherrington, & Bahr, 2012; Kroner & Yessine, 2013).

Randomizing the sample is a third strategy that could improve research regarding the effectiveness of CBT on chronic juvenile offender populations. In the current study, randomizing was not possible because only one treatment program existed for the county's chronic offender population and that county's court was unamenable to dividing the young men into a treatment versus a non-treatment classification. This conundrum (i.e., one treatment program) is not necessarily insurmountable. For instance, researchers could emulate Freudenberg et al. (2010) who recruited non-program committed adolescents to voluntarily participate in services while in custody and after release, thus proving that it is feasible to conduct a randomized intervention trial that follows incarcerated youth after release.

A fourth strategy to improve future investigations of the effects of CBT programming is for researchers to examine how mental illness affects chronic juvenile offenders' participation and response to CBT interventions. The rationale for this strategy is threefold. First, the fields of psychology and psychiatry have given insufficient attention to juvenile justice research (Vermeiren, Schwab-Stone, Runchkin, DeClippele, & Deboutte, 2002). Second, there is a higher rate of serious mental health disorders in the juvenile detention population than the general youth population (20% versus 10%, Coccozza & Skowrya, 2000). Third, psychopathic features are significantly and positively linked with juvenile recidivism (Asscher et al., 2011; Dembo et al., 2008). The present study conceptualized mental illness as a potential treatment interference, yet did not identify the nature of the interference, how the interference impeded treatment (if at all), or how the interference can be managed or overcome. Future studies can examine each of these factors and provide direction on how to provide CBT interventions in group juvenile custody settings.

A final strategy for researchers is to conduct more investigations of chronic juvenile offenders (Trulson, Marquart, Mullings, & Caeti, 2005). Chronic juvenile offenders confound probation staff because they have often received the best of what the juvenile justice system offers yet they are not necessarily prepared for or deserving of the sanctions seen in an adult system. Complicating matters is that there are limited data on the outcomes for chronic juvenile offenders treated in adult versus juvenile settings. Thus, it is important for researchers to evaluate the pre-custody, intra-custody, and post-

custody experiences of these offenders. Information gleaned about who stops offending, reduces offending, or participates in less serious offending can be used to develop interventions (Trulson, Marquart, Mullings, & Caeti).

Conclusion

In this study, I examined the impact of two cognitive behavioral interventions on the recidivism rates of a sample of chronic, serious juvenile offenders. Specifically, I examined the effect of ART (Glick & Gibbs, 2011) delivered to one group of juveniles and ART and T4C (Bush et al., 1998) delivered to another group of juveniles. I also examined whether covariates with reported relationships to recidivism predicted re-arrest. Survival analyses controlling for participation in ART-only versus ART+T4C treatment classes indicated that ART+T4C participants remained in the community without re-arrest for a longer time period than ART-only participants. These results are consistent with the literature indicating CBT exerts a positive effect on recidivism in offender populations (Landenberger & Lipsey, 2005; Lipsey et al., 2007). The results are also consistent with the literature indicating a positive relationship between the number of sessions of therapy received and the amount of client improvement (Hansen, Lambert, & Forman, 2002; Orlinsky, Grawe, & Parks, 1994; Steenbarger, 1994).

Kaplan Meier analyses indicated that none of the variables predicted faster time to re-arrest (i.e., mental health diagnosis, history of parental arrest, gang involvement, violent, felony and weapons charges, and probation violations). Interestingly, non-violent charges predicted faster time to re-arrest, perhaps because of intra-unit peer deviancy training of youth who entered the program with non-violent charges. The failure of the variables to predict re-arrest is inconsistent with the literature, although much of the literature was based on different sample sizes, offender profiles, and data collection methods than those in the present study. Moreover, many studies indicated small to moderate effect sizes (Cottle et al., 2001) and leave room to examine other contributors to re-arrest.

Reflection and Recommendations

The present study's results indicated that 16 months after treatment 40% to 80% of participants had been re-arrested, with an average of 231 days until re-arrest. These results may discourage juvenile probation officers and administrators who prefer to see a lower recidivism rate and a longer average number of days before re-arrest. Before officers and administrators describe the treatment program as a failure, however, it behooves them to place the results into the context of other evaluations of chronic youthful offenders, limited in number as they are.

One place to gather context is Trulson et al.'s (2005) description of the state of treatment for chronic youthful offenders. Trulson et al. claimed that it is difficult and even unrealistic to change the behavior of chronic offenders transitioning from incarceration into young adulthood. To support their claim, Trulson et al. reported that research (Piquero, Brame, Mazerolle, & Haapanen, 2002; Sampson & Laub, 2003) on institutionalized juveniles has demonstrated remarkable consistency that many youth keep offending, both frequently and seriously, well into young adulthood. For these reasons, Trulson et al. argued that persistence, not desistance, seems to be the norm for institutionalized offenders as they transition from incarceration.

Recommendations. Given that young offenders likely persist before they desist, one question to ask is what interventions can shorten the duration of persistence.

Another question is what interventions correspond to the main findings of this study, namely that ART+T4C participants experienced lower re-arrest rates and that no single covariate predicted re-arrest. To answer these questions, I developed a list of recommended interventions and practices, some more cost-effective than others. The list is divided into the following categories: expand CBT programming, provide transition services, and justify the length of the treatment program.

Expand CBT programming. In the present study, ART+T4C participants remained in the community without re-arrest for a longer period than ART-only participants, suggesting that the extra cognitive behavioral therapy programming was helpful. Building from this result, an expansion of CBT programming may be in order. Such an expansion could include CBT transfer-enhancing procedures (Reddy & Goldstein, 2001), the Prepare Curriculum, an expansion of the ART model, or the provision of post-release ART booster classes. Should booster classes be added, the classes could be offered during the most common re-arrest periods reported in the present study's survival analysis (i.e., around days 231 and 500). Particularly innovative administrators might integrate the use of cell-phones into CBT boosters classes (Burraston et al., 2012).

Include family members, when possible and safe. Children are best understood in the context of family (Ryan & Yang, 2005). Agency administrators must ask if it is reasonable to expect low recidivism rates when treatment staff have limited or even non-existent relationships with family members. Research indicates that treatment is unlikely to progress unless key members of the extended family actively and frequently participate throughout the treatment process (Cunningham & Henggler, 1999). Accordingly, probation and mental health staff might consider providing ART+T4C classes for the families of justice-involved youth. During such classes, family members can learn valuable life skills alongside their children (or stepchildren, grandchildren, etc.) while also developing a relationship with treatment staff.

Invite researchers to assist in CBT program implementation. Meta-analyses indicate that the involvement of researchers in program implementation predicts treatment effectiveness (Armstrong, 2003; Lipsey, 1999). The treatment facility where data was collected for the present study is located near multiple universities, including a Tier-1 research university. Therefore, student and faculty research collaborations are feasible.

Provide transition services. Upon release, participants in the treatment program are supervised by probation staff. Apart from supervision, participants receive limited aftercare services such as vocational, educational, mental health, or substance abuse counseling. This treatment model conflicts with a belief held by many in the corrections field, namely that community restraint alone is largely ineffective at reducing recidivism (Bouffard & Bergseth, 2008), particularly when the targeted offender has weak or nonexistent bonds with society (DeJong, 1997).

A more favorable and evidence-based strategy is to provide supervision along with treatment services (DiPlacido, Simone, Witte, Gu, & Wong, 2006), even if the treatment is provided in low frequencies (Trupin, Turner, Stewart, & Wood, 2004). The notion that treatment can help youth is not novel, but the idea that even small doses of treatment can help youth is instructive to juvenile justice administrators responsible for using diminishing resources to decrease recidivism. In all, supervision and treatment is

the recommended service combination to facilitate successful transition for formerly incarcerated youth. That being the case, I created a list of transition-related recommendations.

Participate in multi-agency collaboration. Easy in theory but difficult in practice, multi-agency collaboration often becomes nothing more than industry jargon. Fortunately for probation administrators in Contra Costa County, multi-agency collaboration can become a reality because of the “Youth Justice Initiative.” The Youth Justice Initiative, a \$3 million grant, will target youth-related violence, recidivism, and racial and ethnic disparities across the county. The initiative will test two pilot programs, the School Success Team and a Reentry Success Team. The School Success Team will work on school-wide prevention and intervention efforts in Antioch, CA, the home community of the largest portion of participants in the present study.

More relevant to transition services, the countywide Reentry Success Program will focus on innovative ways to successfully transition young offenders back into their communities with skills aimed at keeping them employed or in school. The initiative will fund comprehensive advocacy and reentry services, including customized, coordinated case management that addresses the multiple determinants of delinquency. Incidentally, the initiative’s goals align with Contra Costa County’s juvenile probation department goal to provide better transition services. With this in mind, it is important that probation staff is included in all initiative-related planning and implementation processes.

Apply best practices for wraparound services. The Youth Justice Initiative intends to address transition services across milieus and agencies (i.e., wraparound), so a discussion about what constitutes wraparound services is justified. The discussion could be guided by Bruns et al.’s (2004) principles of wraparound services. These principles include conducting a team-driven treatment planning process that includes caregivers, children, agencies, and community services; prioritizing family voice and choice; providing individualized, strengths-based services across life domains; using natural supports such as friends, extended family, and neighbors; and using flexible approaches with adequate funding.

Justify the length of the program. Judges, probation, and affiliated staff should consider whether there is marginal rehabilitative effect for longer exposure in the treatment program (Loughran et al., 2009). If there is no marginal benefit, it calls into question the need to expend resources on extended institutional care. Moreover, money spent on extended institutional care could be invested into post-release services.

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Table 1

Means and Standard Deviations of Offense Variables

	Total Sample <i>N</i> =156		ART-only <i>N</i> =90		ART+T4C <i>N</i> =66	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age at first arrest	14	2.1	14	2.1	14	2.1
Months in custody	12	3.0	11	3.2	12	3.2
Months in treatment	17.2	5.6	17.1	5.7	17.2	6.2
Prior juvenile hall	5	4.9	5	4.9	5	4.9
Prior charges	8.2	6.6	7.9	6.6	8.0	6.6
Prior VC	1.2	1.6	1.2	1.6	1.1	1.6
Prior FC	2.2	2.3	2.2	2.3	2.2	2.3
Prior PV	2.6	3.5	2.6	3.5	2.7	3.5
Prior WC	.41	1.1	.57	1.1	.50	1.1

Note. Prior juvenile hall = commitments to a juvenile detention facility; VC = Violent charges; FC = Felony charges; PV = Probation violations; WC = Weapons charges.

Table 2
Means and Percentages of Total Participants, ART-Only Participants, and ART+T4C Participants

	Total Sample <i>N=156</i>		ART-only <i>N=90</i>		ART+T4C <i>N=66</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Foster care	95	60.9	41	45.6	54	81.8
DJJ referred	42	26.9	23	25.6	19	43.9
DJJ transferred	5	3.2	2	2.2	3	4.5
Substance abuse	139	89.1	77	85.6	62	93.9
Psychiatric	71	45.5	42	46.7	29	43.9
Special education	62	39.7	36	40.0	26	39.3
Father arrest	39	25.0	17	18.9	22	33.3
Mother arrest	13	8.3	7	7.8	6	9.09
Both parents arrest	46	29.5	18	20.0	28	42.4
Unemployed parent	53	34.0	34	37.8	19	28.7
Gang involvement	93	59.6	54	60.0	39	59.1
Adolescent parent	24	15.4	14	15.6	10	15.2
Entered with VC	84	53.8	53	58.9	31	46.9
Entered with FC	115	73.7	66	73.3	49	74.2
Entered with WC	38	24.4	19	21.1	19	28.8

Note. Foster care = Referral or placement into foster care; DJJ = Division of Juvenile Justice; Substance abuse = Abuse of any controlled substance; Psychiatric = Diagnosis of mental health disorder; VC = Violent charge; FC = felony charge; WC = weapons charges.

Table 3
Test of Equality of Survival Distributions for the Different Levels of Mental Health Diagnoses, Parental Arrest, and Gang Involvement

	Chi-Square	df	Sig.
<hr/>			
Mental Health Diagnosis			
Log Rank (Mantel-Cox)	2.12	1	.15
Breslow (Generalized Wilcoxon)	3.06	1	.08
Tarone-Ware	2.72	1	.09
<hr/>			
History of Parental Arrest			
Log Rank (Mantel-Cox)	.90	1	.34
Breslow (Generalized Wilcoxon)	.87	1	.35
Tarone-Ware	.90	1	.34
<hr/>			
Gang Involvement			
Log Rank (Mantel-Cox)	1.64	1	.200
Breslow (Generalized Wilcoxon)	3.57	1	.059
Tarone-Ware	2.92	1	.088

Table 4

Test of Equality of Survival Distributions for the Different Levels of Pre-treatment Violent Charges, Pre-treatment Felony Charges, Pre-treatment Weapons Charges

	Chi-Square	df	Sig.
<hr/>			
Pre-treatment Violent Charges			
<hr/>			
Log Rank (Mantel-Cox)	4.00	1	.05
Breslow (Generalized Wilcoxon)	5.25	1	.02
Tarone-Ware	5.13	1	.02
<hr/>			
Pre-treatment Felony Charges			
Log Rank (Mantel-Cox)	.02	1	.90
Breslow (Generalized Wilcoxon)	.04	1	.84
Tarone-Ware	.03	1	.87
<hr/>			
Pre-treatment Weapons Charges			
Log Rank (Mantel-Cox)	.60	1	.44
Breslow (Generalized Wilcoxon)	.31	1	.58
Tarone-Ware	.49	1	.48

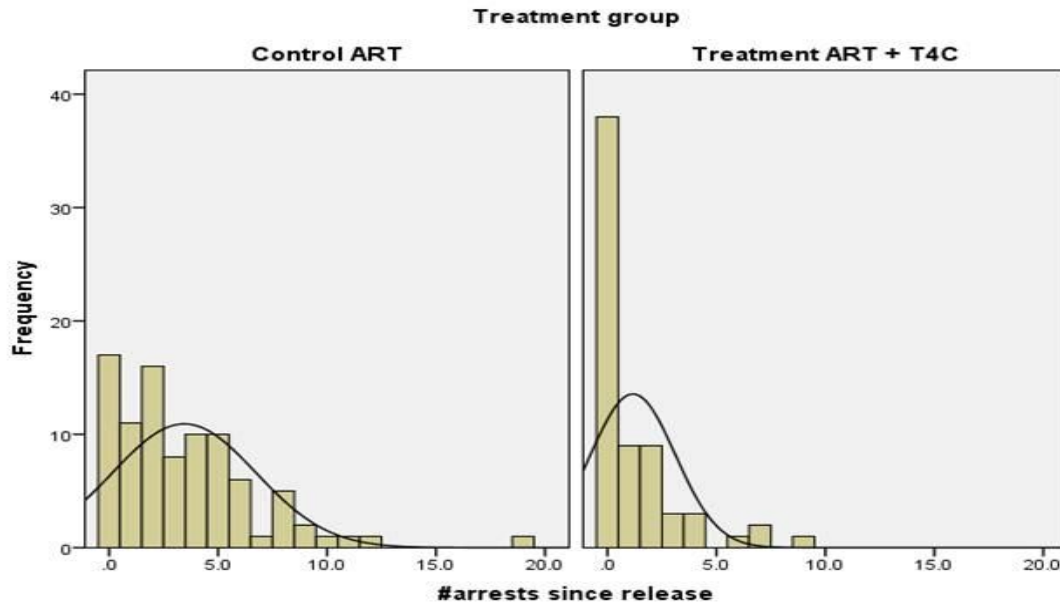


Figure 1. Independent t-test distribution comparing ART-only and ART + T4C participants.

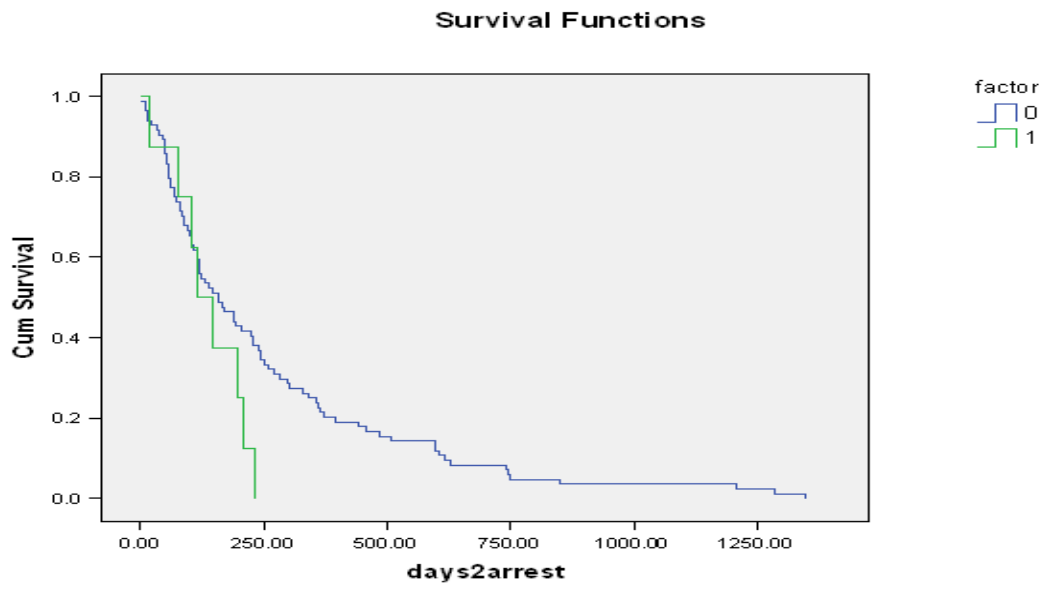


Figure 2. Survival function for the control and treatment groups.

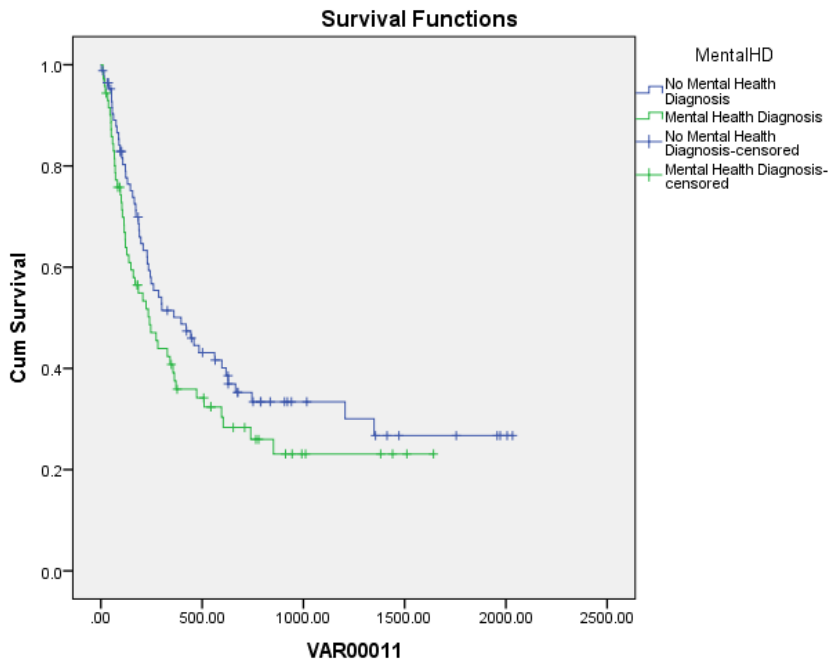


Figure 3. Kaplan Meier survival curve for youth with mental health diagnosis.

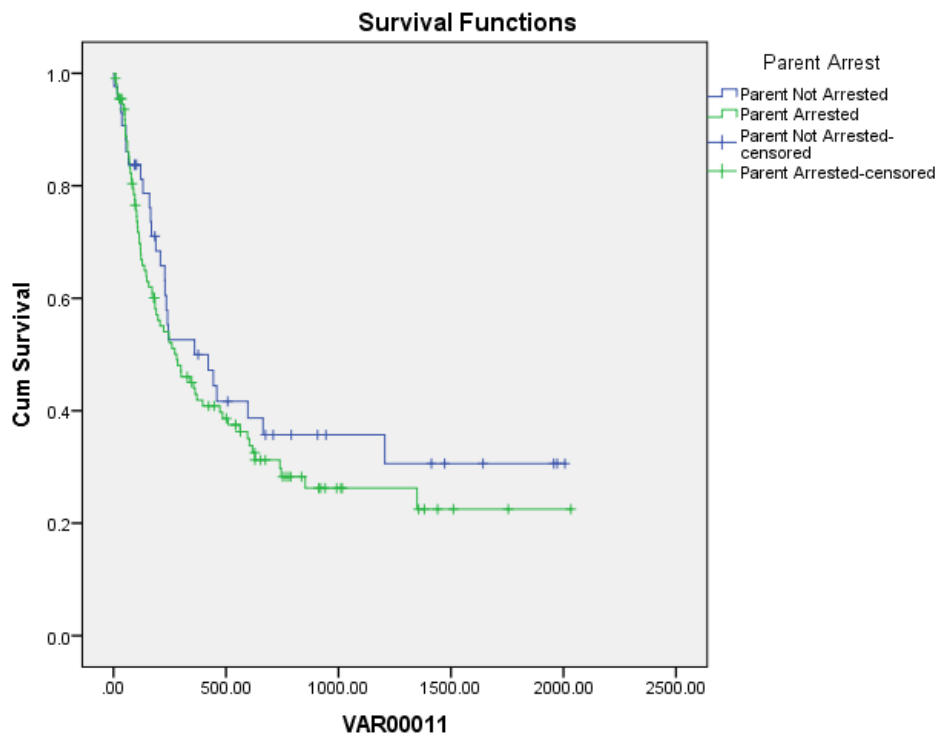


Figure 4. Kaplan Meier survival curve for parental arrest covariate.

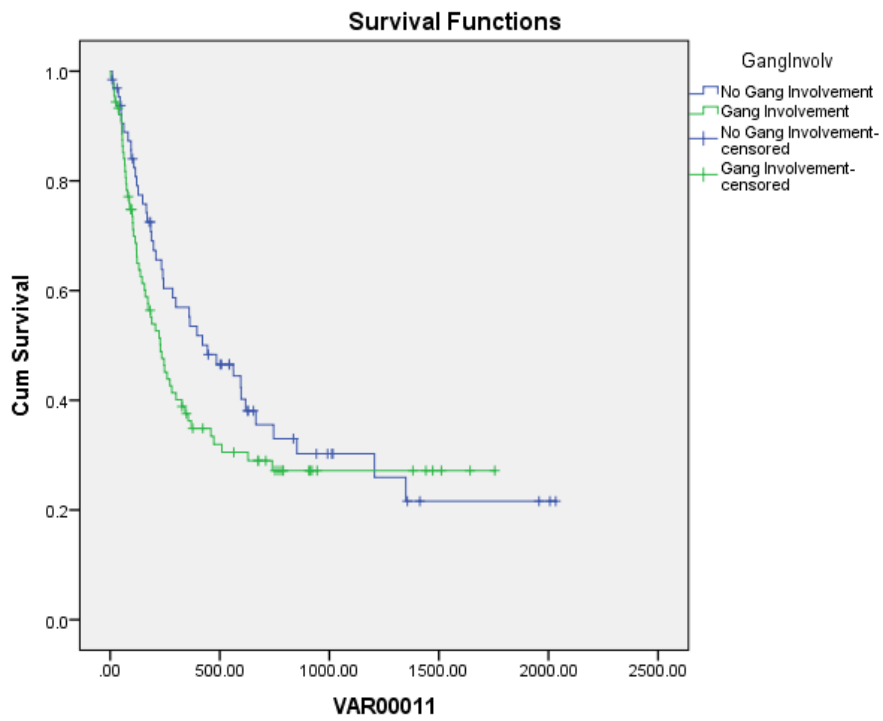


Figure 5. Kaplan Meier survival curve for youth with gang involvement.

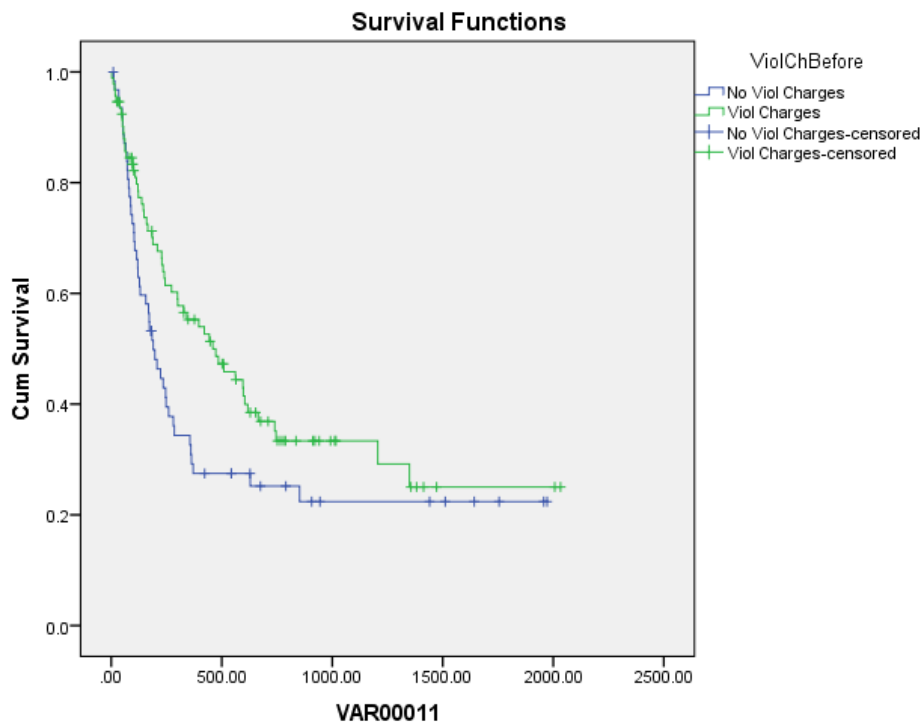


Figure 6. Kaplan Meier survival curve for youth entered treatment with non-violent charges.

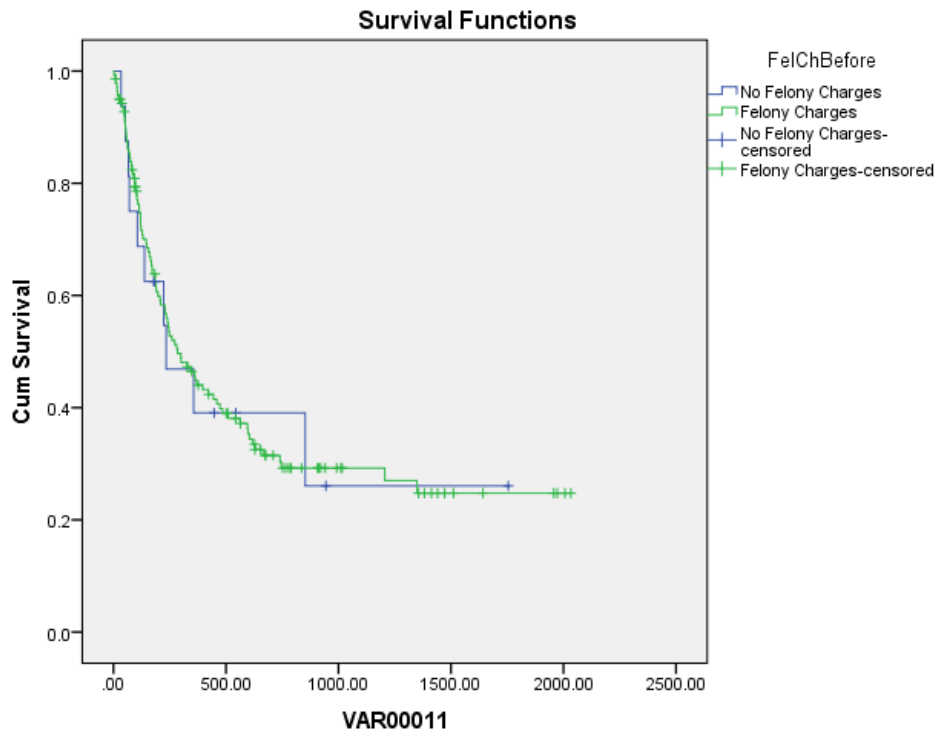


Figure 7. Kaplan Meier survival curve for youth who entered treatment with felony charges.

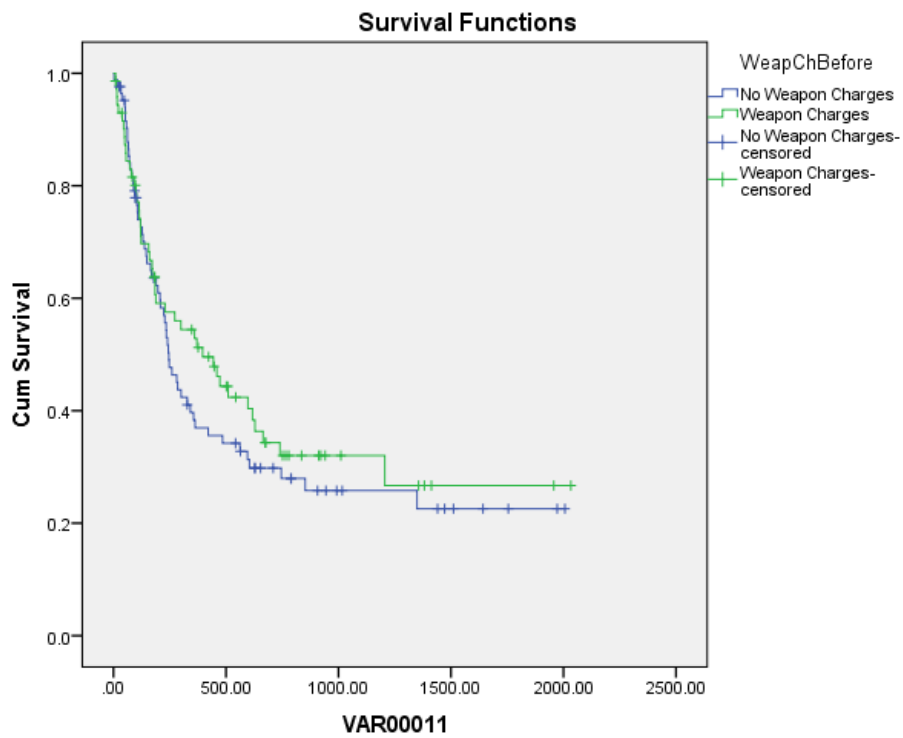


Figure 8. Kaplan Meier survival curve for youth who entered treatment with weapons charges.

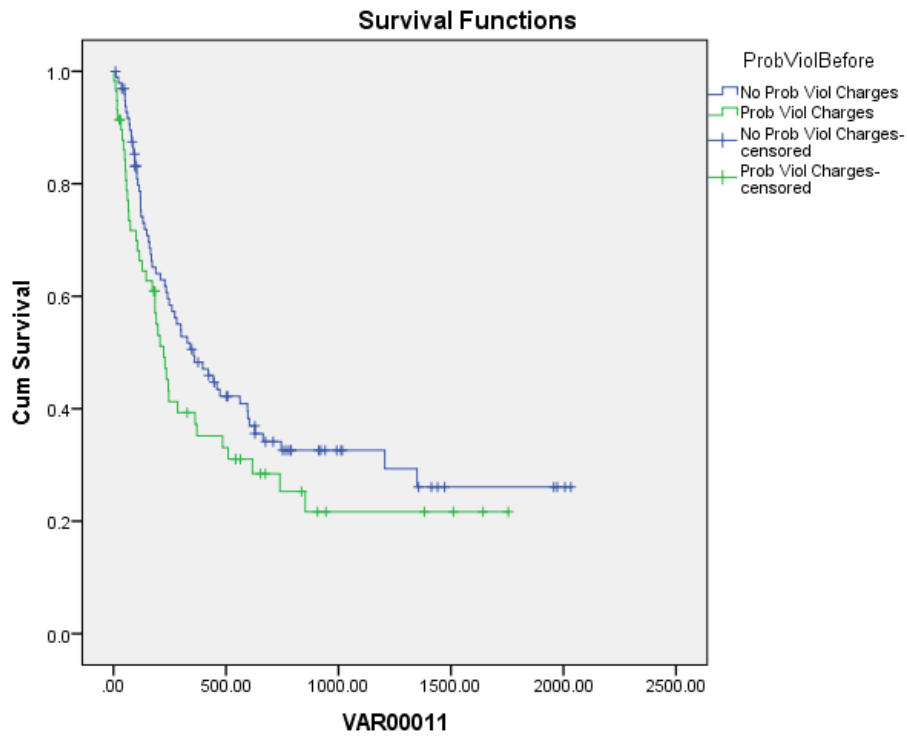


Figure 9. Kaplan Meier survival curve for youth who entered treatment with probation violations.

Appendix

Variable Values

Value	Label	
<u>Demographics</u>		
STUDY ID		
BIRTH DATE		
ENROLLMENT BY #		
COHORT		
ZIP CODE		
MAX CUSTODY		
TIME		
YOTP COMMIT		
DATE		
YOTP ENTER DATE		
YOTP RELEASE		
DATE		
PROBATION		
RELEASE		
DURATION IN		
CUSTODY		
DURATION IN		
PROGRAM		
	0	NO
FOSTER	1	YES
	2	REFERRED
	3	UNKOWN
	0	NO
DJJ	1	YES
	2	REFERRED
	3	ADULT TRANSFER
	0	NO
	1	YES FATHER/NO
PARREST		MOTHER
	2	NO FATHER/YES
		MOTHER
	3	BOTH
	4	UNKNOWN
	0	NONE OR
		INSIGNIFICANT
PCRIME	1	VIOLENT
	2	PROPERTY
	3	DRUGS
	4	SEX
	5	INTIMATE PARTNER
		VIOLENCE

	6	V + P
	7	V + D
	8	V + S
	9	V + IPV
	10	P + D
	11	P + S
	12	P + IPV
	13	D + S
	14	D + IPV
	15	S + IPV
	16	>2
	17	UNKNOWN
PEMPLOY	0	NO
	1	YES
	2	UNKNOWN
SCHOOL	0	NO
	1	YES
	2	GRADUATED
	3	COLLEGE
SPECED	4	UNKNOWN
	0	NO
	1	YES
WORK	2	UNKNOWN
	0	NO
	1	YES
	2	SSI/DISABILITY
PARENT	3	UNKNOWN
	0	NO
	1	YES
	2	UNKNOWN
	0	MOTHER
	1	FATHER
	2	STEPFATHER/MOTHER
	3	FATHER/STEPMOTHER
LIVEWITH	4	BOTH
	5	STEPPARENT
	6	AUNT OR UNCLE
	7	GRANDPARENT
	8	PARTNER
	9	FRIEND
	10	SIBLING
	11	FOSTER PARENT(S)
GANG	12	HOMELESS
	13	UNKNOWN
	0	NO
	1	YES

	2	UNKNOWN
	0	NONE
	1	BIPOLAR D/O
	2	DEPRESSION
	3	ANXIETY
	4	ADD/ADHD
	5	SCHIZOPHRENIA
PSYCH	6	OPPOSITIONAL OR CONDUCT D/O
	7	PTSD
	8	MOOD + ATTENTION D/O
	9	ATTENTION + CONDUCT D/O
	10	>2
	11	OTHER
	12	UNKNOWN
	0	NONE
	1	MARIJUANA
	2	ALCOHOL
	3	NARCOTIC
	4	STIMULANT
SUBST	5	MJ + ETOH
	6	MJ + NARC
	7	MJ + STIM
	8	OTHER
	9	POLYDRUG USE
	10	UNKNOWN
	0	MIXED
	1	BLACK
	2	WHITE
	3	LATINO
RCE	4	ASIAN
	5	PACIFIC ISLANDER
	6	EAST INDIAN
	7	UNKNOWN
	1	HIGH
J AIS	2	MODERATE
	3	LOW
	4	UNKNOWN
	0	Home
	1	OAYRF
	2	Out of county placement
PRIORPLACE	3	Other family member
	4	Homeless
	5	Partner

6	Jail
7	Unknown