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INTERVENTIONS TO REDUCE RECIDIVISM RATES AMONG JUVENILE OFFENDERS

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This paper will review epidemiologic literature on interventions that contribute favorably to reducing rates of recidivism among juvenile offenders. In this context, the exposures are the various interventions and treatment modalities that may be used in an attempt to prevent recidivism; the disease (outcome) is recidivism. Recidivism is defined as "the tendency to relapse into a previously undesirable type of behavior, especially crime."

For the purpose of this review, "juvenile offender" includes boys and girls aged 12-21 who can be classified as juvenile delinquents and/or who have committed at least one violent crime; the juvenile offenders in the studies reviewed may or may not be incarcerated. This review does not include juvenile sex offenders.

This topic is of interest because of my work at a residential treatment facility – Arrowhead Ranch in Coal Valley, IL – that largely serves juvenile offenders. The vast majority of juveniles who are placed at Arrowhead Ranch are probationers, and have been court-ordered by a judge to complete this particular residential treatment program. In general, theories of juvenile justice emphasize treatment and rehabilitation of juvenile offenders, in contrast to justice for adult offenders which favors punishment and sanctions (Tate, Reppucci, & Mulvey, 1995).

Most juveniles who are placed in residential treatment facilities have already been exposed to less restrictive programs, services or interventions in their home communities, yet they have continued to either violate probation or commit new offenses. Residential treatment is usually considered to be a last resort – a juvenile's last chance to avoid being sent to prison. As Barth et al. (2007) point out, when comparing the effectiveness of residential treatment versus intensive in-home therapy, it is important to consider that juveniles in residential treatment are likely to have already failed in-home or community-based interventions, and are therefore most likely facing greater difficulties than juveniles who are placed in intensive in-home therapy.

It has been our experience that most youth who come to Arrowhead Ranch respond well to its structured, safe environment, and most successfully complete their treatment objectives within nine to twelve months. When the juveniles return home, however, some are more successful than others in avoiding new offenses or adhering to the conditions of their probation.

Many resources are spent on keeping juvenile offenders out of prison. Cohen & Piquero (2007) have calculated the value to society of saving a high-risk 14-year-old – i.e. keeping him or her in school and out of prison, and preventing substance abuse – at $3.2 to $5.8 million.

Genovés, Morales, & Sánchez-Meca (2006) stress the importance of targeting chronic violent juvenile offenders. While they may constitute approximately 15% of juvenile offenders, they tend to commit 75-80% of all violent offenses. Also, juveniles who commit violent crimes are at high-risk of becoming chronic offenders.

In Illinois, a pilot program called Redeploy Illinois that offers financial incentives to counties who refer fewer youth to the Department of Corrections has proven to be successful. Rather than spending money to incarcerate juvenile offenders, funds are re-directed toward family and community interventions. Governor Blagojevich has recently authorized expanding the program to additional counties throughout Illinois.

At the same time, the trend in Illinois over the last decade has been to reduce the number of juveniles who are placed in residential treatment by counties and by the Department of Children and Family Services, while increasing efforts to treat and maintain juveniles in their home communities. Indeed, some studies measure failure of community-based programs by the number of out-of-community placements (Hamilton, Sullivan, Veysey, & Grillo, 2007).

With this emphasis on community-based rehabilitation of juvenile offenders rather than incarceration, high quality data are needed in order to assess which programs are most successful at reducing recidivism. It is important to note that this literature review focuses specifically on recidivism among juvenile offenders and not prevention of juvenile offenses.

The purpose of this study is to review epidemiologic literature on interventions that contribute favorably to reducing rates of recidivism among juvenile offenders. For the purposes of this review, such factors may be in the context of a residential facility, or may be community-based.

The reviewed articles employ a variety of epidemiological techniques, including case-control studies, cohort studies, propensity analysis and meta-analysis.

Challenges to comparing data include varying characteristics among the juvenile offenders being studied (including substance use, mental health diagnoses, and the degree of severity of offenses committed), as well as differing follow-up periods for tracking recidivism. Some level of recidivism is expected; generally, the studies reviewed have attempted to show a decrease in recidivism, rather than elimination of recidivism.

LITERATURE REVIEW

Armelius and Andreassen (2007) conducted a literature review of twelve studies that examined the effectiveness of cognitive-behavioral therapy (CBT) for young people aged 12-22 as a treatment method in a residential setting for anti-social behavior. The twelve studies included five randomized controlled trials and seven studies with non-randomized comparison groups. Controls were either treatment techniques other than CBT, no treatment whatsoever (apart from regular prison activity), or residents from the same institution before CBT was introduced.

According to CBT, our "thoughts, images, beliefs and attitudes are intimately related to how we behave" (Armelius & Andreassen, 2007, p. 2). Therefore, CBT interventions by definition integrate both behavioral and cognitive therapy, and aim to strike a balance between the two. CBT can be implemented in a variety of methodologies. Indeed, a diverse array of CBT methodologies – ranging from a few hours up to one year – were documented in the studies reviewed, including, for example, Enhanced Thinking Skills, Moral Reconation Therapy, and Cognitive Mediation Training.

Four analyses were conducted using odds ratios with a 95% confidence interval. Recidivism rates (for CBT vs. control groups) were measured at six, twelve and twenty-four months after release from the residential facility in question, and recidivism rates were compared at twelve and twenty-four months for CBT vs. alternative treatment modalities.

Of the four analyses mentioned above, only one was statistically significant (recidivism at twelve months). The others either included too few participants or too few studies to achieve an acceptable power, or else some of the studies had a low methodological quality as specified by the authors. Another confounder was attrition of participants in the studies.

The results for twelve months following release suggest that CBT is effective in treating adolescents in a residential setting who exhibit anti-social behavior. While individual studies did not always show significant effects, the results for pooled data are clearly significant in favor of CBT compared to standard treatment interventions. The authors conclude that the risk for recidivism within 12 months after release is reduced by about 10% if a young adolescent is treated with CBT rather than standard treatment while in residential treatment (Armelius & Andreassen, 2007, p. 10).

As Armelius and Andreassen (2007) point out, it is difficult to compare treatment of antisocial behavior in youth in residential settings versus those who are not in residential settings. Youth in residential treatment usually have more serious behavioral problems; often other interventions have already been attempted and have been unsuccessful. Other challenges include the limited ability to monitor and support behavioral changes following release, and the inability to practice new skills and behaviors in a natural environment (i.e. in the child's home community, in school and in the family context) while in residential treatment.

Henggeler et al. (2006) studied juvenile drug courts, which were introduced in the 1980s to address the problem of juvenile substance abusers who were involved in criminal activity. Prior to weekly court appearances for one year, juveniles provide urine samples, and the juveniles, parents and substance abuse counselors document each juvenile's progress concerning substance use, compliance with rules at home, school behavior and participation in CBT-based group treatment. Juveniles are either rewarded for their progress, or sanctioned for poor performance. Juveniles who repeatedly achieve positive outcomes are required to attend drug court with diminished frequency.

Henggeler et al. (2006) conducted a randomized trial of 161 substance-abusing and –dependent juvenile offenders aged 12-17, and documented outcomes twelve months after exposure to a particular treatment. Outcomes included alcohol and drug use; completion of services; and criminal activity and mental health symptoms.

The juvenile offenders were assigned to one of four treatment categories: family court (i.e. traditional juvenile court, which included CBT-based group treatment), drug court, drug court enhanced with multi-systemic therapy (MST – an evidence-based methodology which on its own has achieved favorable long-term reductions in drug use and criminal behavior among substance using and abusing juvenile offenders), and drug court enhanced with MST and integrated with contingency management (CM – the close monitoring of substance use).

Overall, results indicate that drug court is more effective at reducing rates of juvenile substance abuse and criminal behavior than family court; drug court with MST was more effective than drug court alone; and drug court with MST and CM was more effective than drug court with MST alone.

The authors raise concerns about the replicability of these results in a less controlled environment. The authors also raise concerns about the cost effectiveness of drug court with MST and drug court with MST and CM. Interventions such as these require the intense and prolonged efforts of highly trained counselors. It is unclear whether the added resources necessary for drug court with MST or MST and CM are worth the relatively modest increase in benefit.

An important limitation of this study is that it did not follow juveniles beyond their twelve-month involvement with drug court; therefore, no conclusions can be drawn about the long-term effects of the four treatment methods.

Caldwell and Van RyBroek (2004) used a case-control study to examine 101 juveniles who were treated at the Mendota (WI) Juvenile Treatment Center (MJTC) until their recommended release or until their commitment expired.

In this study, both the cases and the controls come from a pool of youth who are extremely violent, and who are considered to be the worst of the worst juvenile offenders. Often, earlier community-based prevention and treatment attempts have failed, and the juvenile offenders have shown themselves to be uncooperative and resistant in traditional juvenile corrections settings. This study examines the impact of a particular treatment modality on a population of youth on whom all other attempts have failed.

MJTC was established as part of a broad reform of juvenile justice legislation. Unlike traditional juvenile detention facilities, "MJTC was intended to provide mental health treatment to the most disturbed juveniles held in the state's secured correctional facilities" (Caldwell & Van RyBroek, 2004, p. 625). The particular mental health treatment methodology is known as the Decompression model. This combination of a punitive, correctional approach with a therapeutic, mental health approach is unique, and attempts to strike a balance between "security concerns and a core mental health philosophy" (Caldwell & Van RyBroek, 2004, p. 625). Staff-to-juvenile ratios are more than twice as high as at juvenile correctional institutions. Juveniles treated at MJTC were frequently those who were too disruptive to function in a traditional correctional institutional setting.

The control group (n=147) were admitted to MJTC briefly for assessment and stabilization services, and then returned to the secured correctional institution from which they came. Most juveniles in the control group received some sort of mental health services, though much less frequently and more intermittently than the services provided at MJTC.

The data from this study indicate that 52% of the treatment group re-offended within two years of release from custody; however, 75% of the control group re-offended within two years. Twenty-three percent of the treatment group was violent re-offenders (18% were charged with a violent felony), while 44% of the control group was violent re-offenders (37% were charged with a violent felony).

In sum, intensive mental health treatment – as opposed to simple incarceration – proved to be quite successful among serious violent juvenile offenders, including those with the most extreme problems. Caldwell and Van Rybroek (2004) state, "Sanctions in particular may result in a deteriorating cycle of defiance" (p. 633). The underlying philosophy is that juvenile offenders are not considered 'lost causes; they are in need of rehabilitation, and not purely in need of punishment for their transgressions.

A serious limitation to this study is the fact that assignment in to treatment and control groups was not randomized. Therefore, selection bias is a strong possibility. To address this potential bias, the authors conducted a propensity score analysis to try to control for other factors that could have contributed to the results. A regression model was used to try to predict the treatment group based on a series of variables. Ultimately, the propensity analysis was able to predict the treatment group with 88% accuracy, meaning that the original results remain relevant and valid.

Similar to Caldwell and Van RyBroek (2004), Cuellar, McReynolds and Wasserman (2006) examine the link between mental health treatment and criminal offenses. However, the population studied differs significantly between the two. While Caldwell & Van RyBroek studied serious violent offenders in secure correctional institutions, Cuellar et al explore the possibility of diverting youth from entering the juvenile justice system via mental health treatment. This approach assumes that there is a causal relationship between mental disorders and crime, and that mental disorders can be treated.

Cuellar et al. (2006) explain, "Under mental health diversion programs, justice and social services agencies collaborate to divert youth offenders with mental disorders to mental health treatment in lieu of further court processing. It is hoped that – if mental health treatment is effective – diversion programs can help to reduce recidivism and the severity of crimes committed by offenders with mental disorders, thereby reducing the societal cost of crime" (p. 198). In addition, mental health diversion programs have the potential to minimize formal court intervention, to be less costly than incarceration, and to be more responsive to the particular needs of the youth and his or her family.

The treatment group in this study (n=148) was comprised of youth that were arrested and then referred to the Special Needs Diversionary Program (SNDP) in Texas whose index crime (i.e. the act for which the youth was being referred) was relatively serious (i.e. not simply running away or underage drinking). The control group (n= 151) consisted of youths who were identified as eligible for SNDP and who volunteered for the program, but who were placed on a waiting list for services because no placement was available (p. 202). Juveniles whose cases were transferred to adult court or who were placed in a correctional facility were excluded from the study.

Because of how youth were categorized as cases or controls, the potential for selection bias remains a concern in this study. Propensity scores were used to compare the treatment and control groups; certain observations which had unexpected propensity scores were excluded from analysis.

Observed outcomes included the length of time until the youth re-offended, the seriousness of subsequent offenses, and the frequency of subsequent offenses. More than half of youth with mental disorders were re-arrested (p. 208). However, mental health diversion did prove successful in delaying or preventing recidivism.

The authors raise many important policy considerations, including whether or not similar programs should be voluntary or mandatory. The present study was based on voluntary participation; it is not known whether coerced participation would yield similarly successful results. Another consideration is who should pay for mental health diversion, and how much should be spent on such efforts. Also, more evidence is needed as to the most effective treatment methodologies for specific mental health disorders.

Barth et al. (2007) attempt to make a direct comparison between the effectiveness of residential care and intensive in-home therapy (IIHT). Because of the great difficulty, expense and questionable ethics of performing a randomized clinical trial, the authors instead performed propensity score matching and analysis.

In recent years, community-based and intensive in-home therapy has gained in popularity as an alternative to residential care. In particular, in-home therapy is favored because family members are able to be much more involved in a child's treatment. Also, the authors refer to the "seemingly universal belief that children should be served in the least restrictive environment in which they can be safely treated" (Barth et al., 2007, p. 504). At the same time, the effectiveness of residential care for behaviorally difficult youth is still being debated. In addition, in-home therapy is much less expensive than residential care – as little as 25% of the cost of residential care. Multi-systemic therapy (MST) is one form of intensive in-home therapy that has shown to be particularly effective.

While in-home therapy has emerged as an appealing alternative to residential care, few studies have been conducted that directly compare the effectiveness and the outcomes of the two modalities one year after discharge. In this study, outcomes considered included school status, trouble with the law, and the case status of placement at a home or in a homelike environment.

Research subjects were taken from a large agency (44 locations in seven states) that provides behavioral health services for troubled youth and their families. Of a total sample of 1,369 youth, 937 received IIHT (but had not received residential care from the same agency), and 432 received residential care (but had not received IIHT from the same agency. It is possible that the youth in this study received either residential care or IIHT or both from a different agency prior to placement at the agency in question.

Results of this study revealed that "clients who received IIHT had a consistently higher probability of having a desirable composite outcome and a lower probability of having an undesirable composite outcome compared with clients in RC. These findings do not provide strong support for the argument that IIHT is more effective than RC, only that it is highly unlikely that RC is better than IIHT" (Barth et al., 2007, p. 503).

One potential confounder is the possibility of inherent differences among youth who are placed in residential care versus youth who are referred to IIHT services. A potential weakness of the study is that it examines only one residential care facility, and does not take into consideration differences among residential treatment modalities, referral sources and severity of problems (whether behavioral, social or mental health) presented by residents.

Timmons-Mitchell, Bender, Kishna and Mitchell (2007) explain that previous studies – including randomized clinical trials – on multisystemic therapy (MST) have

shown it to be successful in reducing recidivism in juvenile offenders. However, the authors raise serious concerns about two aspects of the evidence. First, most of the studies have been done under the direct oversight of one or both of the two principal developers of the technique. Second, while MST has proven successful in efficacy studies (e.g. doctoral students in a university-based context under the supervision of one of the developers of MST), its effectiveness in real-world, community-based settings is still in question.

The authors describe MST as a "family- and community-based intervention that uses intense contact with families to understand the functional basis of behavioral problems. Strengths of the youth and family are used to address challenges. A goal of treatment is to teach parents the skills needed to supervise and monitor youth so that additional services are not usually needed" (Timmons-Mitchell et al., 2007, p. 229).

The study described in this article examined re-arrests of juvenile offenders in the 18 months following treatment, as well as youth functioning six months following treatment. Youth functioning was measured using CAFAS, the Child and Adolescent Functional Assessment Scale.

Ninety-eight juveniles convicted of a felony were randomly assigned to one of two groups: 48 were assigned to MST, and 45 were assigned to treatment as usual. The mean age was 15.1. Twenty-two percent of participants were female. The racial distribution of the participants reflected the racial distribution normally seen by this particular court.

Members of the "treatment as usual" control group did not participate in a single alternative program. Rather, the probation officers of the 45 juveniles in this group referred their clients to a variety of programs and services such as drug and alcohol counselors, anger management groups, and individual and family therapy. Often, these services either did not have a family component, or family involvement was called for but did not occur consistently. The authors cited identifying the appropriate moments for follow-up as a challenge, since members of the control group did not always have a clear discharge date. Overall, the 18-month recidivism rate was two-thirds lower for the MST group than for the control group. Six-month functioning scores were higher for the MST group on four of six subscales; notably, the successful subscales include at home, in school and in the community, which are important targets of the MST methodology.

This success is consistent with studies that were performed by the developers of MST, but the effect is less than efficacy studies. Therefore, this study supports MST as a viable treatment model, but also supports the notion that real-world applications of MST are not as successful as MST performed in a university setting.

CONCLUSIONS

Based on my review of the literature, I do not believe that a single intervention can be identified as the best way to reduce recidivism among juvenile offenders. While the objective of epidemiological research is to determine which treatment modality produces the best results, I would argue that there is no "one size fits all" treatment when it comes to juvenile offenders.

Most of the studies contained in this review cited difficulty in making direct

comparisons between treatment and control groups, and all were hesitant to recommend broad application of any one intervention. Even when the nature of juvenile offenses is similar, the juveniles who commit the offenses are enormously diverse. Some have been abused, many have a mental health diagnosis, some have issues with substance abuse, some have gang affiliations, some are parents of young children, some have committed extremely violent crimes, and so on. Some juveniles have committed single crimes, some have a long history of repeat offenses. Motivation to change can also be an important factor in what treatment is recommended for a particular child.

I disagree with the assumption that retaining a juvenile in his or her family home and home community is always in the best interest of the child. In neighborhoods with strong gang or drug presence, for example, it may be more productive for a child to be temporarily removed from the situation than to try to rehabilitate the child in the context of negative peer pressure and temptation.

Residential treatment is no longer the preferred intervention for the majority of juvenile offenders, but it remains relevant for a significant minority. When it comes to placing juveniles in an appropriate program, it is preferable that a range of options is available, ideally including one or more options that are appropriate for that individual child.

Regardless of the treatment modality, family involvement was universally endorsed by all of the studies in this review. This is logical, as a child's family plays a primary influence on the child's values, attitudes and behavior long after an intervention has ended. However, in order to be involved in a meaningful way, parents need to be motivated to serve as a positive role model and perhaps make changes to their own behavior. A lack of motivation to change is a potential challenge when involving parents and families in treatment of juvenile offenders.

As Tate et al. (2005) point out, recidivism can be interpreted in many ways. Furthermore, recidivism may not be the best measure of success. Tate et al. (2005) suggest that self-reports and reports from collateral observers would be useful to provide a more comprehensive assessment of violent behavior.

At the same time, Tate et al. (2005) argue against focusing too much on outcomes (i.e. recidivism), and recommend that attention also be paid to process and function of treatment methodologies. I strongly agree with this statement, based on my experience working at Arrowhead Ranch. Positive outcomes may or may not be apparent six or twelve months after an intervention; positive effects may not emerge until many years later. Also, a long-term (five years or more) positive outcome may not be solely attributable to a specific treatment intervention, but that treatment may have played a part in the eventual rehabilitation of the juvenile offender.

From a program perspective, an important lesson is to create programs that are dynamic and flexible enough to respond to a diverse clientele. A possible direction for future research could be to study which interventions lead to the most successful outcomes for the most diverse juvenile offenders. Further research on how to measure success in the process and function of treatment modalities in real-world applications would also be a valuable addition to the body of literature.

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