The Effectiveness of Therapeutic Foster Care for the Prevention of Violence

A Systematic Review

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Overview

In programs of therapeutic foster care, youth who cannot live at home are placed in a foster home in which foster parents are trained to provide a structured environment for learning social and emotional skills. Youth in the program are monitored at home, in school, and in leisure activity; program personnel work closely with foster parents, and may collaborate with teachers, probation officers, employers, and others in the youth's environment to ensure prosocial learning and behavior. Evaluations have examined the effects of therapeutic foster care on violence among children with severe emotional disturbance and among adolescents with chronic delinquency. Two studies of therapeutic foster care for children with severe emotional disturbance yielded inconsistent results; evidence to date is insufficient to determine effectiveness. Three studies of therapeutic foster care for adolescents with chronic delinquency by one research team indicated that this intervention can reduce subsequent violence in this population. The Task Force on Community Preventive Services (the Task Force) recommends therapeutic foster care for the reduction of violence among adolescents with chronic delinquency.

Introduction

Violence by juveniles is a substantial problem in the United States. Self-reports of sampled groups of juveniles aged 11 to 17 years, representative of the U.S. population in 1976, indicate that approximately 4.5% of these juveniles were serious violent offenders, defined as committing three or more violent offenses (i.e., aggravated assault, robbery, or rape) in 1 year.[1] (This same proportion, 4.5%, of juveniles in the U.S. population in 2000 would total 1.27 million people.) When resurveyed in 1981, these same individuals each reported on average 11 index offenses (an FBI classification including serious property offenses as well as violent interpersonal offenses), and 161 total offenses in 1980—almost one every 2 days. Other estimates of the prevalence of chronic delinquency use lower defining thresholds (e.g., one or more serious violent acts in at least two assessments in a 5-year period), and are more than three times as high.[2] Populations such as these are responsible for large proportions of all violent and nonviolent juvenile crime. These juveniles are threats not only for the direct harm they cause, but also because they may play roles in the socialization of other potential delinquents. Rates of self-reported serious violence among adolescents have remained at high and constant levels over the last 2 decades.[3]

Reports by the victims of crime (aged ≥12 years) paint a similar picture of the extent of juvenile violence. In 1999, residents of the United States reported being victims of almost 2.5 million violent crimes by perpetrators that they estimated to be aged between 12 and 20 years—a rate of almost 7 offenses per 100 juveniles in this age group, some of these presumably repeat offenses by single juveniles.[3] Also, based on victim reports, juveniles commit violence at a higher rate than any other age group. One third of reported offenses were "simple assaults" (i.e., attacks without a weapon and not resulting in an injury requiring >2 days of hospitalization); the remaining offenses were "serious violent crimes" (i.e., aggravated assaults, robberies, or rapes, but not including murder). Over the last 25 years, 10- to 17-year-olds, who constitute <12% of the population, have been involved as offenders in the perpetration of approximately 25% of serious violent offenses.

Only a small proportion of violent offenses by juveniles are reported and responded to by agencies of law enforcement and justice. Over the past 25 years, victims have reported <40% of all violent crime and <50% of serious violent crime to law enforcement. In 2000,

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0749-3797/05/$–see front matter
doi:10.1016/j.ampre.2004.10.007

there were approximately 65,000 arrests made of people aged 10 to 17 years for homicide, aggravated assault, robbery, or rape.[3] This suggests that a relatively small proportion (<10%) of seriously violent juveniles (as assessed by self-report or by victim report) are apprehended. Correspondingly, comparison of self-reports of chronic juvenile offenders with official records suggests that 86% of this population have no record of arrest over a period of 3 years during which they were frequently involved in serious crime.[4] On the other hand, a longitudinal study of one setting indicates that among juveniles who enter the juvenile justice system, 46% of males and 27% of females do so at least once more.[5] Over the last 3 decades, arrests for serious violent crime among juveniles reached a peak in 1993, and, by 2000, declined to the level of previous decades.

Rates of violent victimization of youth (by other youth or by adults) are also alarming. During the last decade, the highest rates of homicide in the United States have occurred among people aged 15 to 24 years.[6] Rates of homicide victimization among people aged 10 to 29 years in the United States are more than six times higher than they are in all other industrialized nations for which reliable rates are available.[7] Aside from fatal violence, in 2000, there were ≥6 nonfatal violent crimes committed against juveniles per 100 juveniles aged 12 to 19 years.[3]

Given the prevalence of juvenile violent crime and victimization in recent decades, communities have been concerned about how to prevent juvenile delinquency and how to rehabilitate juvenile offenders.[8] Systematic reviews of interventions for serious juvenile offenders, including violent offenders,[9] suggest that some types of interventions may be effective. For institutionalized juveniles, successful interventions include programs to teach interpersonal skills, placement in teaching family homes (in which parents are trained to teach behavioral skills), and community residential programs. For noninstitutionalized juveniles, successful interventions were found to focus on individual counseling, the development of interpersonal skills, and behavioral programs. Therapeutic foster care commonly combines several of these approaches.

In therapeutic foster care programs, youth who cannot live at home, perhaps because of difficulties in controlling their behavior or because of other family problems, are placed in a foster home in which foster parents are trained to provide a structured environment for learning interpersonal skills and participating in positive social activities. Clear rules are set, and consequences for violation are established and followed.

Therapeutic foster care programs may include the close supervision of participants' school and leisure activities, the separation of participants from their delinquent peer environment, behavioral therapy, and visits to participants' families of origin or usual caregivers. Programs may also include family therapy for participants' usual caregivers in order to improve family functioning if and when participants return to their homes. Participating youth generally stay in the foster care setting for ≥6 months and may then be placed back in their own homes. When youth return to their homes, aftercare groups, led by program staff, may be arranged with parents or guardians.

Therapeutic foster homes usually care for one youth at a time. In addition to training, foster parents receive continuous support and supervision from program personnel, and are compensated for their work with participants.[10] Therapeutic foster care, or similar programs, have been called by many names,[11] including therapy foster care, multidimensional treatment foster care, specialist foster care, treatment foster family care, family-based treatment, and parent–therapist program.

Therapeutic foster care is provided as an alternative to different forms of group and residential treatment or hospitalization for children and adolescents who have a history of chronic antisocial behavior, delinquency, or emotional disturbance. For adolescents with chronic delinquency, therapeutic foster care is regarded as suitable by justice system personnel for those who are not a substantial threat to public safety and can thus be treated in the community. Therapeutic foster care and the more conventional group home care are sometimes regarded as the last alternatives before placement in a secure facility (such as a state training school) is required for public safety.[8]

Therapeutic foster care is also being used to address a wide range of public health goals for a variety of juvenile populations, including children with physical health conditions, such as AIDS, cerebral palsy, deafness, and developmental disability.[12] The Foster Family-Based Treatment Association (*www.ffta.org*) promotes expert opinion-based standards for therapeutic foster care; however, these standards have not been systematically evaluated as intervention strategies.

Therapeutic foster care is distinguished from usual foster care by its provision of a structured and nurturing environment for a small number of youth, small numbers of youth per staff, frequent and close supervision by program staff, program coordination with the youth's school, extensive support services for treatment families, and coordination of care for all participants.[12] Therapeutic foster care separates participants from their usual peer environment, whereas placement in group homes—a standard intervention for chronically delinquent youth—often results in increased exposure to delinquent peers.

Several social theories offer explanations for the intended effects of therapeutic foster care on violence and other outcomes. According to social learning theory, interactions among family members shape prosocial as well as antisocial behavior patterns.[13] Parents

play an important role in socializing their children, and the parents' ability to provide both support and supervision are crucial to their children's development. Therapeutic foster care provides structured and supportive parenting for youth whose parents are unable to do so.[10] In contrast, persistent exposure to delinquent peers (e.g., in group homes) has been shown to facilitate the development of shared antisocial identities among group members, tending to exacerbate aggressive and delinquent behavior.[14–16] This is systematically avoided in therapeutic foster care.[10]

We reviewed studies that assessed any of the following directly measured violent outcomes: violence, reported by self or others, including violent crime, and specifically assault, homicide, robbery, and rape. We also reviewed studies examining any of five proxies for violent outcomes, which may include clearly violent behavior, as well as behavior that is not clearly violent:

1. Measures of the psychiatric diagnosis of conduct disorder (in which "the basic rights of others or major age-appropriate societal norms or rules are violated")[17]
2. Measures of externalizing behavior (i.e., rule-breaking behaviors and conduct problems, including physical and verbal aggression, defiance, lying, stealing, truancy, delinquency, physical cruelty, and criminal acts)[18]
3. Rates of delinquency
4. Rates of arrest
5. Rates of conviction
6. Rates of incarceration

We considered that therapeutic foster care might reduce suicidal behavior or violent victimization such as being bullied. However, we found no studies that examined suicidal behavior or victimization as outcomes of therapeutic foster care.

The purpose of this review is to assess the effectiveness of therapeutic foster care programs in preventing violence. Thus, we reviewed studies of therapeutic foster care only if they assessed violent outcomes or proxies for violent outcomes. We reviewed studies whether or not violence was the primary target or outcome of the program, as long as the study assessed violent outcomes and qualified by specified inclusion criteria, principally comparison of populations exposed and not exposed to the intervention. The effects on other outcomes were not systematically assessed, but have been selectively reported if they were addressed in the studies reviewed.

Earlier reviews of therapeutic foster care have noted the multiplicity of names and of program contents, including diverse therapeutic approaches.[12,19–21] However, the following ten common components have been noted:

1. Treatment of only one or two children within the homes of carefully selected substitute families
2. Low caseloads (i.e., number of youth–foster family pairings monitored by each program staff member [5 to 15])
3. Frequent, treatment-oriented supervision of the treatment parents that promotes a therapeutic relationship with the child
4. Provision of treatment services that are well documented for each child
5. Preparing treatment parents to function as professionals through intensive pre-service and in-service training, good pay, and frequent performance evaluations
6. Intensive support services to treatment parents
7. Crisis intervention services
8. Education liaison
9. Health screening and medical services
10. Coordination of each child's system of care[12]

A review of the effectiveness of services for adolescents conducted by the Office of Technology Assessment in 1991 concluded that therapeutic foster care was a "promising" intervention for the reduction of mental disorders, but noted methodologic flaws in studies available at that time.[22] The only available meta-analysis of therapeutic foster care[20] assessed 40 studies conducted between 1974 and 1996, and reported moderate benefit for outcomes classified as "behavior problems," and large benefit for outcomes classified as "social skills." A recent survey of therapeutic foster care programs in one state (North Carolina) indicated that some conform more closely than others to the standards of care developed by the Foster Family-Based Treatment Association.[23] To date, no review has systematically assessed the effects of therapeutic foster care on violent outcomes.

The *Guide to Community Preventive Services*

The systematic reviews in this report represent the work of the independent, nonfederal Task Force. The Task Force is developing the *Guide to Community Preventive Services* (the *Community Guide*) with the support of the U.S. Department of Health and Human Services in collaboration with public and private partners. The Centers for Disease Control and Prevention provides staff support to the Task Force for development of the *Community Guide*. A special supplement to the *American Journal of Preventive Medicine*, "Introducing the *Guide to Community Preventive Services*: Methods, First Recommendations and Expert Commentary," published in January 2000 (volume 18, supplement 1), presents the background and the methods used in developing the *Community Guide*.

Table 1. Selected Healthy People 2010[a] objectives related to therapeutic foster care programs

Injury prevention
Reduce hospitalization for nonfatal head injuries from 60.6 to 45.0 per 100,000 population[b] (Objective 15-1).
Reduce hospitalization for nonfatal spinal cord injuries from 4.5 to 2.4 per 100,000 population[b] (Objective 15-2).
Reduce firearm-related deaths from 11.3 to 4.1 per 100,000 population[b] (Objective 15-3).
Reduce nonfatal firearm-related injuries from 24.0 to 8.6 per 100,000 population[c] (Objective 15-5).
Reduce hospital emergency department visits from 131 to 126 per 1000 population[d] (Objective 15-12).
Violence and abuse prevention
Reduce homicides from 6.5 to 3.0 per 100,000 population[b] (Objective 15-32).
Reduce maltreatment of children from 12.9 (in 1998) to 10.3 per 1000 children aged <18 years (Objective 15-33a).[e]
Reduce child maltreatment fatalities from 1.6 (in 1998) to 1.4 per 100,000 children aged <18 years (Objective 15-33b).[e]
Reduce the rate of physical assault by current or former intimate partners from 4.4 (in 1998) to 3.3 per 1000 persons aged ≥12 years (Objective 15-34).
Reduce the annual rate of rape or attempted rape from 0.8 (in 1998) to 0.7 per 1000 persons aged ≥12 years (Objective 15-35).
Reduce sexual assault other than rape from 0.6 (in 1998) to 0.4 per 1000 persons aged ≥12 years (Objective 15-36).
Reduce physical assaults from 31.1 to 13.6 per 1000 persons aged ≥12 years (Objective 15-37).
Reduce physical fighting among adolescents from 36% to 32% (baseline: students in grades 9 through 12, fighting during the previous 12 months in 1999) (Objective 15-38).

[a]U.S. Department of Health and Human Services.[24]
[b]Baseline: 1998 data, age adjusted to year 2000 standard population.
[c]Baseline: 1997 data.
[d]Baseline: age adjusted to year 2000 standard population.
[e]Note that objective 15-33a is per 1000 children aged <18 years, whereas objective 15-33b is per 100,000 children aged <18 years. Comparable objectives would be reduction of child maltreatment to 1290 per 100,000 children aged <18 years and reduction of child maltreatment fatalities to 1.6 per 100,000.

Healthy People 2010 Goals and Objectives

The intervention reviewed here may be useful in reaching several objectives specified in *Healthy People 2010*,[24] the disease prevention and health promotion agenda for the United States. These objectives identify some of the significant preventable threats to health, and focus the efforts of public health systems, legislators, and law enforcement officials for addressing those threats. Many of the proposed *Healthy People* objectives in Chapter 15, "Injury and Violence Prevention," relate to therapeutic foster care and its proposed effects on violence-related outcomes. Violence-specific objectives that might be related to therapeutic foster care are listed in Table 1.

Information from Other Advisory Groups

The Surgeon General's 2001 report, *Youth Violence*,[25] recommended therapeutic foster care as a model program for the secondary prevention of violence among violent or seriously delinquent adolescent youths. The Surgeon General's 1999 report, *Mental Health*,[26] also endorsed therapeutic foster care for children with emotional problems, without clearly specifying age limits; this report also noted the standards of the Foster Family-Based Treatment Association. Similarly, the Center for the Study and Prevention of Violence recommends therapeutic foster care as a cost-effective alternative to group or residential treatment, incarceration, and hospitalization for adolescents who have problems with chronic antisocial behavior, emotional disturbance, and delinquency.[10] The Center also cites evidence of the effectiveness of therapeutic foster care for younger children. The Center recommends the program designed by Chamberlain[27] as a model "Blueprint" program that meets its highest standards of evaluation evidence in terms of experimental design, substantial effect, replication, and sustainability.

Conceptual Approach and Analytic Framework

The general methods for conducting systematic reviews for the *Community Guide* have been described in detail elsewhere.[28–31] This section briefly describes the conceptual approach and the determination of outcomes considered in assessing the effects of therapeutic foster care on violence.

The conceptual model, or "analytic framework," used to evaluate the effectiveness of therapeutic foster care in reducing violence (Figure 1), depicts the flow of influences from intervention through mediating processes (i.e., the interactions of program staff, foster parents, and juveniles in the program), intermediate outcomes (i.e., the separation of juveniles in the program from delinquent peers, enhancement of school performance, and family function), and finally to violent outcomes. In this model, we include two broad outcome categories: violence by a juvenile and victimization of juveniles.

Methods

In the *Community Guide*, evidence is summarized on (1) the effectiveness of interventions; (2) the applicability of evi-

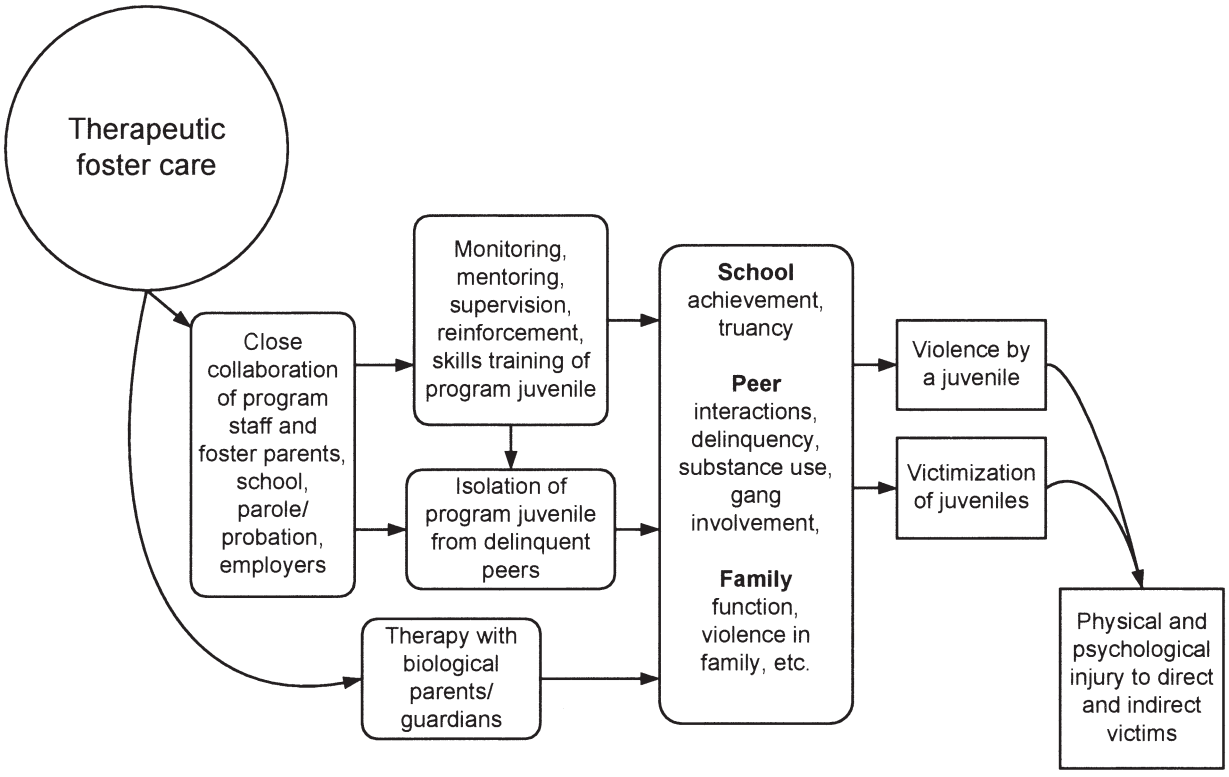

Figure 1. Analytic framework: effects of therapeutic foster care on violence. Circle denotes intervention; rectangles with rounded corners show intermediate outcomes; and rectangles with square corners show health outcomes.

dence data (i.e., the extent to which available effectiveness data might apply to diverse population segments and settings); (3) positive or negative effects of the intervention other than those assessed, including positive or negative health and nonhealth outcomes; (4) economic impact; and (5) barriers to implementation of interventions. When evidence of the effectiveness of the intervention on a specific outcome is insufficient, information about applicability, economics, or barriers to implementation is not included, unless there is an issue of particular interest.

The process used to review evidence systematically and translate that evidence into the conclusions reached in this article involved:

Forming a systematic review development team and a team of consultants (see Acknowledgments section for list of consultants)
Developing a conceptual approach to organizing, grouping, and selecting interventions for review
Selecting interventions to evaluate
Searching for and retrieving evidence
Assessing the quality of and abstracting information from each study and the body of evidence of effectiveness
Translating the evidence of effectiveness into recommendations
Considering data on applicability, other effects, economic impact, and barriers to implementation
Identifying and summarizing research gaps

This section summarizes how these methods were used in developing the reviews of therapeutic foster care. The reviews were produced by the systematic review development team and a multidisciplinary team of specialists and consultants representing a variety of perspectives on violence.

Search for Evidence

Electronic searches for literature were conducted in Medline, EMBASE, Applied Social Sciences Index and Abstracts, NTIS (National Technical Information Service), PsycInfo, Sociological Abstracts, NCJRS (National Criminal Justice Reference Service), and CINAHL (Cumulative Index to Nursing & Allied Health Literature) in November and December 2001. We also reviewed the references listed in all retrieved articles, and consulted with experts on the systematic review development team and elsewhere. We used journal papers, governmental reports, books, and book chapters. The initial literature search on the topic was conducted in August 2000, and a second (update) search was conducted in July 2001.

In searching the literature, our inclusion criteria included:

Evaluation of the specified intervention
Assessment of at least one of the violent outcomes specified
Conducted in an established market economy,[a]
Primary study rather than, for example, guideline or review
Comparison of a group of people who had been exposed to the intervention with a group of people who had not been exposed or who had been less exposed. (The comparisons could be concurrent or in the same group over time—before and after the intervention.)

[a]Established market economies as defined by the World Bank include Andorra, Australia, Austria, Belgium, Bermuda, Canada, Channel Islands, Denmark, Faeroe Islands, Finland, France, Germany, Gibraltar, Greece, Greenland, Holy See, Iceland, Ireland, Isle of Man, Italy, Japan, Liechtenstein, Luxembourg, Monaco, the Netherlands, New Zealand, Norway, Portugal, San Marino, Spain, St. Pierre and Miquelon, Sweden, Switzerland, the United Kingdom, and the United States.

We included any applicable study published or in press through December 2001, using all studies available. As noted, the outcomes evaluated to determine the effect of the intervention were violence by a juvenile and victimization of juveniles. These outcomes are referred to as "recommendation outcomes," because, if evidence is sufficient, they provide the basis for recommending the intervention.

Assessing the Quality and Summarizing the Body of Evidence on Effectiveness

Each study that met the inclusion criteria was read by two reviewers who used standardized criteria to record information from the study.[30] Disagreements between the reviewers were reconciled by consensus among development team members. In addition, to ensure a consistent application of assessments of both study design suitability and limitations in execution quality within the body of evidence, every evaluated study was presented and discussed in meetings of the systematic review development team.

Each study that met the inclusion criteria was evaluated by using standardized criteria (available at *www.thecommunityguide.org/methods/default.htm*) for suitability of the study design and threats to validity.[28] Noncomparative studies were excluded from further evaluation. Our classification of the designs of studies reviewed accords with standards of the review process, and sometimes differs from the classification used in the original studies. On the basis of the number of threats to validity, studies were characterized as having good, fair, or limited execution.[28,30] Studies with good or fair quality of execution, and any level of design suitability, were included in the body of evidence.

We calculated percent point changes (relative percent change) and baselines using the following formulas: For studies with before-and-after measurements and concurrent comparison groups:

$$\text{Effect size} = (\text{Ipost}/\text{Ipre})/(\text{Cpost}/\text{Cpre}) - 1$$

where

Ipost = last reported outcome rate in the intervention group after the intervention
Ipre = reported outcome rate in the intervention group before the intervention
Cpost = last reported outcome rate in the comparison group after the intervention
Cpre = reported outcome rate in the comparison group before the intervention

For studies with post measurements only and concurrent comparison groups:

$$\text{Effect size} = (\text{Ipost} - \text{Cpost})/\text{Cpost}$$

For studies with before-and-after measurements but no concurrent comparison:

$$\text{Effect size} = (\text{Ipost} - \text{Ipre})/\text{Ipre}$$

For studies in which outcomes were reported in scale measures, as in behavior check lists, and information on standard deviations (SDs) was available, effect sizes were calculated using the following formulas:

$$\text{Effect size} = (\text{Ipost} - \text{Cpost})/\text{SD}_C$$

where SD_C is the standard deviations of the control population. Such effect sizes were reported separately from effect sizes estimated as relative percent change, as described above. For studies in which outcomes were reported in scale measures, where information on SDs was not available, effect sizes were calculated as relative percent changes, as described above.

We report the effect of the intervention as "desired" when the intervention is associated with a decrease in a violent outcome examined, and as "undesired" when the intervention is associated with an increase in the violent outcome compared with its effect in the control population.

To report effect sizes from multiple studies, we use the median and, if there were seven or more effect sizes, the interquartile range. We also note whether zero is included within the upper and the lower interquartile range. Interquartile ranges including zero suggest that the results are inconsistent in direction; interquartile ranges not including zero suggest that the results are consistent in direction. In some cases, we had to select among several possible effect measures for our summary measures of effectiveness. When available, we included measures adjusted for potential confounders in multivariable analysis rather than crude effect measures.

No studies were excluded from the evaluation strictly on the basis of an insufficient follow-up period. If the intervention program had multiple evaluations at different follow-up points, we chose the evaluation at the longest follow-up period with an attrition rate of $<30\%$.

We summarized the strength of the body of evidence on the basis of the number of available studies, the strength of their design and execution, and the size and consistency of reported effects, as described in detail elsewhere.[28] In brief, by *Community Guide* standards, single studies of greatest design suitability and good execution can provide sufficient evidence of effectiveness if the effect size is itself considered sufficient; single studies are generally considered sufficient only if the effect measure is statistically significant ($p < 0.05$, two-tailed test). Three studies of at least moderate design suitability and fair execution, or five studies with at least fair execution, can provide sufficient evidence of effectiveness if the findings are consistent in direction and size, and if the effect size is itself considered of public health importance. Greater numbers of studies or combinations of greater design suitability and execution, along with consistency and adequacy of effect sizes, may lead to a conclusion of strong evidence of effectiveness. Statistical significance is considered principally when there is only one study of greatest suitability and good execution. When the number of studies and their design and execution quality are sufficient by *Community Guide* standards to draw a conclusion on effectiveness, the results are summarized both graphically and statistically.

It is critical to note that when we conclude that evidence is insufficient to determine the effectiveness of the intervention for a given outcome, we mean that we do not yet know what effect, if any, the intervention has on that outcome. We do not mean that the intervention has no effect on the outcome.

Applicability

If an intervention is found to be effective, we assess evidence regarding its applicability in diverse settings, populations, and

circumstances. We note whether existing evidence derives from limited conditions, so that its generalizability is uncertain. Likewise, we note whether it has specifically been applied in different conditions (e.g., to white and minority populations, younger and older children, in schools and communities). The goal of this assessment is the determination of known and unknown conditions under which the intervention is effective, and thus, the known limits of its application.

Other Effects

As noted, the *Community Guide* review of therapeutic foster care did not systematically assess the effects of this intervention on other outcomes (e.g., school achievement, truancy, psychological adjustment, stability of post-intervention living arrangements). However, we mention some of the benefits noted in the studies we have reviewed. We also note the potential harms of the therapeutic foster care intervention if they were mentioned in the effectiveness literature or were thought to be of importance by the systematic review development team.

Economic Evaluations

Economic evaluations of interventions were conducted only if there was sufficient or strong evidence of effectiveness. They focus on costs and benefits of the violent outcomes that are the focus of this review. Methods used in economic evaluations have been published previously.[31,32]

Summarizing Barriers to Implementation of Interventions

Barriers to implementation are summarized only if there is evidence of effectiveness of the intervention.

Summarizing Research Gaps

Systematic reviews in the *Community Guide* identify existing information on which to base public health decisions about implementing interventions. An additional benefit of these reviews is identification of areas in which information is lacking or of poor quality. To summarize these information gaps, remaining research questions for each intervention evaluated are first identified by the research team. Where evidence of effectiveness of an intervention is sufficient or strong, remaining questions about effectiveness, applicability, other effects, economic consequences, and barriers are summarized.

Where evidence of effectiveness of an intervention is insufficient to determine effectiveness, remaining questions about effectiveness and other effects are summarized. Identification of research gaps in applicability, economic evaluations, or barriers before the demonstration of effectiveness is premature. For each category of evidence, research issues that emerged from the review are identified, based on the informed judgment of the team.

Results: Part I—Intervention Effectiveness and Economic Efficiency

We reviewed the evidence concerning the violent behavior of children who received therapeutic foster care. Our search identified five studies[33–37] that reported the effects of therapeutic foster care programs on violence by juveniles. Descriptive information about execution quality, design suitability, and outcomes evaluated in the studies is provided in Appendix A. Review of these studies indicated that they assessed two similar, but differing interventions, each applied to a population distinguished by both age and underlying problems. Two studies[33,34] assessed interventions in which, with some guidance from program personnel, clusters of five foster parent families cooperated in the care of five children (aged 5 to 13 years) with severe emotional disturbance. In one of these studies,[34] children were referred by mental health, social service, and school personnel or parents; in the second study,[33] the source of referral was unclear. These programs were of relatively longer duration, with an average length of 18 months. In this review, we refer to these programs as "cluster therapeutic foster care for children with severe emotional disturbance" or simply as "cluster therapeutic foster care."

The remaining three studies[35–37] assessed an intervention in which program personnel collaborated closely and daily with foster families in a therapeutic foster care program directed toward older juveniles (aged 12 to 18 years) with a history of chronic delinquency. The studies assessed the effects of the program on juveniles mandated to out-of-home care, but who were regarded as sufficiently safe to allow community treatment. These programs lasted, on average, 6 to 7 months. In this review, we refer to these programs as "program-intensive therapeutic foster care for chronically delinquent juveniles," or simply as "program-intensive therapeutic foster care." We assessed the effectiveness of cluster therapeutic foster care and program intensive therapeutic foster care separately.

Effectiveness

Cluster therapeutic foster care for children with severe emotional disturbance. One study of this intervention was of greatest design suitability and fair execution,[33] and the other study was of least design suitability and good execution.[34] One study assessed the effects of this intervention on "conduct disorder" (which measures oppositional defiant behavior and physical aggression, and is not equivalent to the psychiatric diagnosis of conduct disorder),[33] and the other focused on externalizing behavior.[34] (see Appendix A). In neither of these studies were SDs reported.

One study compared a cluster therapeutic foster care intervention,[33] the Parent–Therapist Program, to

group residence for the treatment of severe emotional disturbance among youth aged 6 to 12 years. Conduct disorders were assessed before and after the intervention using scores on the Behavior Problem Checklist Factor I.[38] The study reported an increase (31.3%) in conduct disorders associated with cluster therapeutic foster care compared with the control program for girls, and a negligible effect (−0.2%) for boys; neither effect was statistically significant.

The second study[34] provided information on the effects of New York State's version of cluster therapeutic foster care, Family-Based Treatment (FBT), on externalizing behavior (assessed in the Externalizing subscale of the Child Behavior Checklist)[39] among children aged 6 to 13 years with severe emotional disturbance. The study reported a small, statistically nonsignificant increase (2.5%) in externalizing behavior among children following the intervention.

In summary, there were too few studies on which to base a conclusion on the effectiveness of cluster therapeutic foster care for children with severe emotional disturbance for the reduction of violence. Moreover, available study findings were inconsistent and mostly in the undesirable direction.

Program-intensive therapeutic foster care for chronically delinquent juveniles. Among three studies of this intervention, one was of greatest design suitability and good execution,[37] one was of greatest design suitability and fair execution,[35] and one was of least design suitability and good execution.[36] One study each assessed the effects of therapeutic foster care on incarcerations 1 year following the intervention,[35] arrests for violent crimes 1 and 2 years following the intervention,[36] and self-reported felony assaults 1 year following the intervention[37] (see Appendix A).

Chamberlain and Reid[40] have also assessed program-intensive therapeutic foster care both for older and younger juveniles with emotional problems. In 1991, they evaluated program-intensive therapeutic foster care among youth aged 9 to 18 years with severe emotional disturbance released from a state mental hospital. In addition, Chamberlain and Reid implemented an "Early Intervention Treatment Foster Care" program for severely abused and neglected children aged 4 to 7 years, and reported a benefit in terms of the reduction of behavior problems (from a list of 36 items of which only one was distinctly violent).[41] However, because they did not report violent outcomes in either study, these evaluations are not included in our review.

The first of Chamberlain's therapeutic foster care evaluation studies reviewed here[35] examined rates of incarceration before and after treatment among 16 juveniles aged 12 to 18 years, who were diverted from correctional institutions to foster care. Controls were selected among youth receiving other residential treatment (i.e., group care) within the community, matched on gender, age, and date of commitment. Of the youth in therapeutic foster care, 69% had prior felony charges, compared with 63% of the youth in group care; 38% of those in foster care, and 44% of those in group care had been physically abused; 56% of those in foster care and 63% of those in group care were below grade level in school performance.

Of participants in the program-intensive therapeutic foster care, 75% completed the program, in contrast to 31% of those in the control group; the only four juveniles whose parents had histories of chronic criminal activity or drug use or both were the 25% who failed to complete the foster care program. Ten of the 16 youth in the therapeutic foster care program had families to which they could have returned following treatment; these families were given family therapy.

The study reported a significant decrease in the proportion of youth in the foster care program incarcerated after the program, compared with the control group. This effect declined from 57.1% in the first year after the intervention to 46.7% for the 2 years after the intervention. The study did not indicate the charges associated with incarceration, at least some of which may not have been violent. In this study, duration of therapeutic foster care treatment was inversely correlated ($r=-0.71$, $p=0.001$) with the number of days of subsequent incarceration, which suggested a dose response to treatment.

Another study examining the therapeutic foster care program[36] involved a before-and-after comparison of arrests for violent interpersonal crimes (based on official records) among 88 boys and girls aged 12 to 18 years at the time of referral; this study had no concurrent comparison group. Prior to the intervention, boys in the sample had been arrested an average of 10.8 times, girls 8.4 times; 89% of boys and 51% of girls had been charged with a felony; 27% of boys and 12% of girls were victims of physical abuse; and 6% of boys and 29% of girls had attempted suicide. Among participants, 71% of boys and 73% of girls successfully completed the program. Within 1 year after completion of the therapeutic foster care program, 10% of boys and 12.5% of girls had been arrested for a violent offense (i.e., robbery, discharging a weapon, assault, murder, rape, hit and run, reckless endangering, carrying a concealed weapon, menacing, negligent homicide, or harassment). Compared with 1 year pre-intervention, the study reported a decrease of 74.7% in the proportion of boys arrested for violent crimes 1 year post-intervention, and a corresponding decrease for girls of 69.2%. The researchers note that, despite similarly beneficial outcomes for boys and girls following the intervention, during the program, aggressive behavior problems reported by foster parents increased among

girls, while decreasing for boys; this difference was statistically significant (F test, $p=0.005$).

A third study[37] used a randomized controlled trial to assess the effects of therapeutic foster care on self-reported felony assaults (i.e., aggravated assault, sexual assault, and gang fights) among 79 males aged 12 to 17 years at the initiation of the study. Boys placed in other residential treatment (group care) within the community served as the control group. Before the intervention, on average, youth in the study had received their first criminal charge before age 13 and had 13 to 15 prior charges each; >25% had parents who had been convicted of crimes; and >75% had run away from prior placements. During the study, 30.5% of boys placed in therapeutic foster care ran away, compared with 57.8% of boys placed in group care.

One year following the intervention, boys in both groups had high rates of criminal referrals—a mean of 5.4 referrals for boys who were assigned to group homes, and 2.6 referrals for boys assigned to therapeutic foster care. However, controlled for demographics and criminal background, boys receiving therapeutic foster care reported approximately 73.5% ($\beta=-0.265$, $p=0.023$) fewer felony assaults post-intervention than did those placed in group care. In the Elliott Behavior Checklist Self-Report Scales, boys receiving therapeutic foster care had 55.6% lower (more desirable) scores for felony assault than did boys receiving group care. The researchers demonstrate that the benefit of therapeutic foster care is substantially mediated by the family management practices of foster parents (including discipline, supervision, and positive adult–child relationship) and by the separation of program youth from delinquent peers; together, these factors account for an estimated 32% of the program's effect on subsequent violence.[40] In this study, time in placement was not associated with rates of subsequent criminal behavior, which contradicts evidence of a dose effect reported in an earlier study.

In summary, on the basis of an adequate number of studies with findings that are consistent and of relevant public health magnitude, the Task Force concludes that program-intensive therapeutic foster care for chronically delinquent juveniles reduces violence. The median effect associated with program-intensive therapeutic foster care on violence by juveniles with a history of chronic delinquency is reduction of violent crime by 71.9%.

Applicability. All studies of program-intensive therapeutic foster care for chronically delinquent juveniles were conducted by one research group and in one place (Eugene OR). Although similar programs are in place elsewhere,[23] we are not aware of any other programs that have been evaluated for violent outcomes. Thus, applicability with regard to setting may be a concern.

The focus of Chamberlain's studies of program-intensive therapeutic foster care for chronically delinquent juveniles has been on boys.[35–37] Two studies include girls[35–37] and suggest equally beneficial effects in terms of subsequent violence. However, one of these studies[36] suggests that behavioral problems reported by foster parents decreases for boys, but paradoxically, increases during the first 6 months of the therapy intervention for girls. A study of therapeutic foster care for female juvenile delinquents initiated in 1997 should produce results in the near future.[8] Where ethnicity has been specified, study populations have been predominantly white, and no study of program-intensive therapeutic foster care for chronically delinquent juveniles has addressed ethnic differences in program effects on participant populations.

Chamberlain's studies indicate that two characteristics of a youth's background and environment may hinder the effectiveness of therapeutic foster care: the youth's victimization by sexual abuse, and a home with parents who have a history of crime or chronic drug abuse. One study[36] found that juveniles with a history of being sexually abused had a higher rate of offenses in the year following the intervention.

Other positive or negative effects. Systematic analysis of the many other possible beneficial or harmful effects is beyond the scope of this review. However, the studies reviewed above discussed other effects of therapeutic foster care programs. In the randomized trial of therapeutic foster care for chronic male offenders,[37] self-reported rates of general delinquency and "index" offenses were lower among therapeutic foster care participants than among those in the control group. (General delinquency was lower by 55.7%, index offenses were lower by 62.8%.) The researchers also reported that youth in the therapeutic foster care program were taught responsible family behavior, and were trained to improve school attendance, relations with teachers and peers, and homework performance, although measured findings on these outcomes were not reported. Foster care participants also spent, on average, almost twice as many days living at home following the program as did group care participants. If sustained, it is likely that the improvements associated with therapeutic foster care would have substantial benefits in the participant's life course.

In addition, some of the studies reviewed indicate a potentially negative effect of therapeutic foster care among girls. As noted, one study reviewed[36] found that rates of problem behaviors reported by foster parents increased among female participants during the first 6 months of therapeutic foster care. This initial increase in behavior problems among girls might result in their dismissal from foster homes before completion of the program, due to a lack of steady improvement.[36]

Economic Efficiency

Our search identified two economic evaluations of therapeutic foster care programs provided to adolescents with chronic delinquency problems. One study[10] assessed program costs for therapeutic foster care. Only those program costs incurred by the government (state and local) were considered in the analysis, and included personnel (i.e., case manager, program director, therapists, recruiter, and foster parent trainer), and foster parent stipends, as well as additional health services (e.g., mental health care). Based on the quality assessment criteria used in the *Community Guide*,[31] the study was classified as satisfactory (rather than good) largely due to insufficient detail on program costs and the lack of sensitivity analyses on important study parameters. Average program costs were $18,837 per youth (in 1997 dollars).

The second study was an incremental cost–benefit analysis[41] of a therapeutic foster care program compared with standard group care. Cost–benefit analysis is an evaluation technique that standardizes, in dollar terms, both the costs and benefits accrued in a given time period. Results are typically reported as a single value (e.g., net benefits). Incremental program costs (i.e., the additional cost per participant in one program compared with the other) were $1912 (in 1997 dollars) per youth. Total net benefits (total benefits minus total costs) ranged from $20,351 to $81,664 per youth. This estimated range does not include benefits to youth in the program, such as increased earnings and improved life course outcomes.

The second study was classified as good based on the quality assessment criteria used in the *Community Guide*.[31] While many details on program benefits were included, insufficient details on program costs were provided. The economic summary table for these studies is provided at the website *www.thecommunityguide.org*.

Barriers to Intervention Implementation

The most prominent barriers to implementing therapeutic foster care discussed in the literature include difficulty recruiting, training, and retaining suitable foster families.[10] Recruitment and training must be conducted year-round in order to maintain a group of well-trained foster parents. This often necessitates hiring a full-time foster parent recruiter. Research indicates that providing an additional monthly stipend to the normal reimbursement rate increased foster parent retention.[40] An even greater increase in retention rates (by almost two thirds) was evident when enhanced training and support was included along with the stipend. In addition, the rigor and fidelity required to implement the program might be difficult to maintain, considering the strict monitoring and frequent contact with families required in therapeutic foster care interventions.[10] Therefore, it is essential to establish effective systems of communication for treatment staff and foster families.

Conclusion

According to *Community Guide* rules of evidence,[28] available studies provide scientific evidence that, compared with the standard of care in group residential facilities, therapeutic foster care programs are more effective in reducing violent outcomes among adolescents who have histories of chronic delinquency. It is important to note that these therapeutic foster care programs have been used only for juveniles regarded as sufficiently safe to treat in communities and not for chronically delinquent juveniles thought to require custody in secure facilities such as state training schools. Evidence is not yet sufficient to determine whether therapeutic foster care programs targeting younger children with severe emotional disturbance are effective in reducing violent outcomes, because only a small number of studies exist and study findings are not consistent.

Results: Part II—Research Issues

We identified key research issues in several areas which have not been answered or which merit further research.

Effectiveness

Cluster therapeutic foster care for children with severe emotional disturbance. Evidence on the effects of cluster therapeutic foster care for pre-adolescent children with severe emotional disturbance was insufficient to determine their effectiveness (for the reduction of violence). Only two studies of this form of therapeutic foster care assessed violent outcomes. The studies we reviewed suggest either no effect or, for girls, possible harm. Further research on the effectiveness of therapeutic foster care with this and other child and adolescent populations would clarify other possible benefits (or harms) of this intervention. Follow-up studies should determine short-term as well as long-term effects.

Program-intensive therapeutic foster care for adolescents with a history of chronic delinquency. The evidence we have reviewed indicates a benefit of therapeutic foster care for the reduction of violence in adolescent populations with a history of chronic delinquency. As indicated earlier, the population that might benefit is a large one. Given such a large potential need, it will be useful to conduct research, perhaps in the form of demonstration projects, to make the intervention more effective or efficient. Because the foster

care programs in current use are heterogeneous,[23] and differ in content, organization, personnel, intensity, and other characteristics, questions that should be addressed regarding the effectiveness of therapeutic foster care for the prevention of violence include the following:

Are there populations of juveniles for whom therapeutic foster care works best?
Which program components work best with which populations?
Which program components are essential, and which dispensable?
What is the optimal intensity and duration of the program?
Are there circumstances in which therapeutic foster care does not work, or in which additional intervention is necessary (e.g., with abused juveniles)?
What characteristics of foster families are associated with greater program effectiveness?
What community factors are essential for program success?
How would therapeutic foster care compare with programs more effective than group residential treatment with which therapeutic foster care is usually compared?
What after-care (post-discharge) conditions and services would promote optimal sustained program gains?

Applicability

The studies examined to determine the effectiveness of therapeutic foster care for adolescents with chronic delinquency were conducted by a single established research center in one region of the United States. The applicability of findings to similar interventions implemented by others in other geographic areas is unknown. In addition, the effectiveness of therapeutic foster care programs for the prevention of violence among juvenile populations with other problems is unclear. The body of evidence was sufficient to determine effectiveness only for the target population of adolescent youth with a history of severe, chronic delinquency.

The effectiveness of therapeutic foster care among female populations is less clear than for males. The effects of therapeutic foster care may vary by gender, indicating a need to modify programs to accommodate such differences.

Of the studies assessed in our review, most did not include information on the race/ethnicity of participants. Of those that did provide such information, the majority of participants were white. It is still unclear whether other racial/ethnic populations would benefit as did the populations studied, and whether modifications of the intervention (e.g., employing foster parents of the same ethnicity as the youth in the program) would enhance success for these populations.

More research is needed to determine effectiveness among children with severe emotional disturbance and among other populations, such as mentally retarded children, children who have been sexually abused, and children with AIDS, for whom foster care may be a viable alternative to other treatment options.[42–44]

Other Positive or Negative Effects

As noted, this review did not systematically summarize evidence of the effectiveness of therapeutic foster care programs on nonviolent outcomes. Such outcomes might include school achievement; truancy; substance abuse; sexual activity; social skills; psychological adjustment; stability of home environment; and nonviolent delinquency, such as running away, theft, weapon carrying, and property crimes. In general, the research questions for these outcomes are similar to the research questions raised above for violent outcomes. An additional question is: What are the benefits (and harms) to foster families, schools and communities?

Economic Evaluations

The available economic evidence was limited. Considerable research is warranted on the following questions:

What is the cost-effectiveness of the various alternative therapeutic foster care programs?
How can effectiveness in terms of health outcomes or quality-adjusted health outcomes be better measured, estimated, or modeled?
How can the cost benefit of this program be estimated from a societal perspective?
How do specific characteristics of this approach contribute to economic efficiency?
How does program intensity affect the outcome and cost-effectiveness of the intervention?

Barriers

Several important barriers may adversely affect implementation and outcomes of therapeutic foster care programs. Addressing the following research questions may help to avoid or overcome these barriers:

What design characteristics of therapeutic foster care programs improve the work satisfaction and retention of foster parents? Characteristics to assess include the selection process, training, ongoing support, respite care, and compensation.
What features of service systems are essential for efficient implementation and sustainability of therapeutic foster care programs?
What is the minimum level of services and communications infrastructure needed to support adequate supervision of foster families?

What combination of community characteristics provides optimal community readiness for implementation and sustainability of therapeutic foster care programs?

Discussion

This review addresses the effects of therapeutic foster care on violent outcomes among juveniles. Substantial positive effects have been found for the prevention of violence among adolescents with histories of chronic delinquency, with reductions of more than 70% for felony assaults during the first year after completion of the program (in the only randomized trial of this program). The demonstrated beneficial effects of therapeutic foster care for these juveniles may be associated with the intense collaboration of program personnel with foster parents and others involved in the lives of program juveniles and with the separation of program juveniles from delinquent peers—a focus of the programs evaluated.

There is reason to suspect that the intervention with which therapeutic foster care is compared in two of the studies reviewed (i.e., residential group care), is itself not an optimal program insofar as delinquent youth have substantial opportunities to interact with delinquent peers, and may thus have their delinquent behavior reinforced. This raises concern that the benefits reported for therapeutic foster care in comparison may be spurious. Nonetheless, residential group care is the standard of community care, and thus the alternative to which therapeutic foster care is proposed. In addition, meta-analysis indicates that community residential programs are effective in the treatment of institutionalized offenders.[9] And finally, studies of the effects of therapeutic foster care that do not have group care comparisons, but only before-and-after comparisons (e.g., Chamberlain and Reid[36]) also indicate substantial improvement in this population of chronic delinquents.

The population of chronic delinquents toward which therapeutic foster care might be targeted is a large one. In 1997, the most recent year for which data are available, 71,678 juveniles were committed to residential placement for delinquency in the United States.[5] Of these, approximately 36%, or 25,800 juveniles were committed in facilities that were not locked, but only "staff secure."[5] Similarly, a survey by the Child Welfare League of America in 1996 indicated that, among 35 states responding to the question, there were approximately 29,000 children in residential group care.[45] Thus, given that therapeutic foster care is intended for juveniles thought to be sufficiently safe for treatment within communities, there is a large population of juveniles in residential placement who might be eligible for interventions such as therapeutic foster care, and this is only the relatively small proportion of chronic delinquents in custody.

The intervention may also change violent behaviors by younger participants with severe emotional disturbance, but the evidence of its effectiveness for this population is not yet sufficient to draw conclusions or make any recommendations. Other possible benefits may result from therapeutic foster care (as discussed above), and they should be assessed when determining the ultimate cost–benefit balance of such interventions. The greater improvements found in our review for programs targeted toward juvenile delinquents and emphasizing separation from delinquent peers is only a start in answering a long list of research questions related to finding the best approaches for therapeutic foster care.

In conclusion, this review, along with the accompanying recommendations from the Task Force,[46] should prove a useful and powerful tool for public health policymakers, program planners and implementers, and researchers. This review may help to secure resources and commitment for implementing therapeutic foster care interventions, and provide direction and scientific questions for further empirical research in this area.

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Points of view are those of the Task Force on Community Preventive Services and of respective authors, and do not necessarily reflect those of the Centers for Disease Control and Prevention; National Institute of Justice, U.S. Department of Justice; or National Institutes of Health.

No financial conflict of interest was reported by the authors of this paper.

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Appendix A

Table A1. Studies measuring effect of therapeutic foster care on preventing violence

Author & year Design suitability: design Quality of execution	Location Study period Population	Duration Training Support Intervention components Control group	Sample selection Assignment to treatment conditions Sample size (at assessment)	Effect measure Effect reported in study	Relative percent change (significance level)
Chamberlain (1990)[1] Highest: prospective with comparison Fair	Oregon Period not given Adolescents with multiple risk factors and histories of delinquency; 12–18 years old at first referral; mean age 14.6 10 boys, 6 girls per intervention and comparison group	~5 months Foster families received 8 hours of training conducted by project case managers and experienced TFC parent; focused on using behavior management methods to provide structured living environment Weekly foster parent group meetings conducted by case manager, program director, therapists, and clinical consultant; individual therapy for juveniles; family therapy sessions for biological families; daily (weekday) calls to foster parents; home visits if youth returning home after placement; case managers on call at all times Structured learning of prosocial behaviors: monitoring of school, work, and leisure activities; separation from delinquent peers	Juveniles committed to state training school, then diverted to community treatment Selection not described Controls matched on age, sex and date of commitment to treatment I: n=16 C: n=16	Proportion incarcerated in state training schools Baseline: 75% each group 1st yr after exit: I: 37.5% C: 87.5% 2nd year period following exit: I: 50.0% C: 93.8%	1 yr: −57.1% (p<0.01) 2 yrs: −46.7% (p=0.018)

Table A1. continued

Author & year Design suitability: design Quality of execution	Location Study period Population	Duration Training Support Intervention components Control group	Sample selection Assignment to treatment conditions Sample size (at assessment)	Effect measure Effect reported in study	Relative percent change (significance level)
		Controls (matched on age, sex, and date of commitment to treatment), treated in various settings: 8 in group homes, 4 in secure residential treatment center: 2 in parents' homes, 2 in programs similar to intervention TFC program			
Chamberlain (1994)[2] Lowest: before-and-after; no comparison Good	Oregon Period not given Adolescents with multiple risk factors and histories of delinquency; 12–18 years old at first referral; mean age 14.5 for boys, 14.8 for girls; 51 boys, 37 girls; ~52% from families with income <$10,000/year	~6 months Foster families received 8 hours of training conducted by project case managers and experienced TFC parents; focused on using behavior management methods to provide structured living environment Weekly foster parent group meetings conducted by case manager, program director, therapists, and clinical consultant; individual therapy for juveniles; family therapy sessions for biological families; daily calls (on weekdays) to foster parents; home visits if youth returning home after placement; case managers on call 24/7.	Consecutive referrals, presumably all eligible No control population, boys compared to girls, before and after intervention I: n=88	Number of arrests for violent crimes 1 yr pretreatment: Boys: 0.52 Girls: 0.45 1 yr after exit: Boys: 0.13 Girls: 0.18	Boys: −75% Girls: −60% (p<0.001)

Table A1. continued

Author & year Design suitability: design Quality of execution	Location Study period Population	Duration Training Support Intervention components Control group	Sample selection Assignment to treatment conditions Sample size (at assessment)	Effect measure Effect reported in study	Relative percent change (significance level)
		Structured learning of prosocial behaviors; separation from delinquent peers; monitoring of school, work, and leisure activities Control: effect in boys compared with effect in girls, before and after the intervention			
Chamberlain (1998)[3] Highest: prospective with comparison Good	Oregon Period not given Boys with multiple risk factors and histories of delinquency; 12–17 years old at first referral; mean age 14.9: 85% white, 6% Latino, 6% black, 3% Native American	~7 months Foster families received 20 hours of training conducted by project case managers and experienced TFC parents; focused on using behavior management methods to provide structured living environment Weekly foster parent group meetings conducted by case manager; program director, therapists, and clinical consultant; individual therapy for juveniles; family therapy sessions for biological families; daily calls (on weekdays) to foster parents; home visits if youth returning home after placement; case managers on call at all times	Consecutive referrals presumably all eligible Random I; $n=37$ C: $n=42$	Felony assault scale of Elliott Behavior Checklist I: 1.2 C: 2.7 Regression: Felony Regressioassault as dependent variable controlled for age at first criminal referral, age, at baseline, prereferral rate of felony assault	−55.6% ($p=0.05$) $\beta=-0.265$ ($p=0.023$)

Table A1. continued

Author & year Design suitability: design Quality of execution	Location Study period Population	Duration Training Support Intervention components Control group	Sample selection Assignment to treatment conditions Sample size (at assessment)	Effect measure Effect reported in study	Relative percent change (significance level)
		Structured learning of prosocial behaviors; separation from delinquent peers; monitoring of school, work, and leisure activities Controls enrolled in group care programs with 6–15 boys per residence; more emphasis placed on peer influence, less on adult influence; 83% of participants attended in-house schools, 77% participated in group therapy, 67% participated individual therapy			
Evans (1998)[4] Lowest: before-and-after; no comparison Study designed as prospective with comparison. Review preferred before-and-after comparison as control. Good	New York Recruitment completed July 1995 Seriously emotionally disturbed children 5–13 years old at first referral mean age 9; 90% male; 83% white, 5% Native American, 5% black; 56% living in poverty; 34% of parents chronically unemployed	~17 months Foster families received 18 hours of training conducted by family specialist (mental health professional); focused on prosocial skills and ABC model of behavior analysis, and planning (antecedents to problem behaviors behaviors, and reinforcing/consequences)	All eligible Random I: n=12 C: n=16	Externalizing scale of Child Behavior Checklist Pre-treatment: I: 67.00 C: 76.46 Post-treatment: I: 68.67 C: 73.19	2.5%. (Statistical significance not reported)

Table A1. continued

Author & year Design suitability: design Quality of execution	Location Study period Population	Duration Training Support Intervention components Control group	Sample selection Assignment to treatment conditions Sample size (at assessment)	Effect measure Effect reported in study	Relative percent change (significance level)
		Foster families organized into support groups of five families each, plus one respite family and five family specialists, met weekly to monthly; informal family contacts among parents and children within support groups; family specialist (mental health professional) provides needs evaluation, coordination, and ongoing treatment support Structured learning of prosocial behaviors; reinforcement of positive behaviors and skills Control: compared participants before and after intervention			
Rubinstein (1978)[5] Highest: prospective with comparison Fair	Ontario, Canada Recruitment from 1972 to 1975 Emotionally disturbed children 6–12 years old at referral; mean age 9 years, 4 months 19 boys, 8 girls in I group; 37 boys, 8 girls in C group	~18.7 months Foster families received eight training sessions (length and contact not described) Foster families organized into support groups of five families each that meet weekly to monthly led by staff member (social worker, psychometrist, or child care worker); informal family contacts among parents and children	All eligible in residential assessment cottage Not random I: n=27 C: n=45	Conduct disorder scale of Quay-Peterson Behavior Problem Checklist Girls: pre-treatment: I: 11.6 C: 13.1 Girls, post-treatment: I: 9.3 C: 8.0 Boys, Pre-treatment: I: 18.2 C: 19.1 Boys, post-treatment: I: 9.7 C: 10.2	Girls: 31.3% Boys: −0.2% (Not statistically significant)

Table A1. continued

Author & year Design suitability: design Quality of execution	Location Study period Population	Duration Training Support Intervention components Control group	Sample selection Assignment to treatment conditions Sample size (at assessment)	Effect measure Effect reported in study	Relative percent change (significance level)
		within support groups; home visits if planning to return home after placement; contacts with biological families Clear definitions of treatment goals and specific strategies to achieve them Controls placed in residential treatment centers			

B regression coefficient in Chamberlain 1998 study; C, comparison group; I, intervention group; TFC, therapeutic foster care; yr, year.

References for the Appendix

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