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Toward Targeted Interventions: Examining the Science Behind Interventions for Youth Who Offend

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Abstract

Youthful offending is a complex behavior that develops from an interaction between social experiences and individual differences in thinking patterns and emotional reactions favoring antisociality. The combination of factors associated with offending varies across individuals and influences the ways in which youth perceive, interpret, and respond to a wide range of experiences. Programs must consider the specific environmental (e.g., community), institutional (e.g., schools, parents, peers), and individual factors impacting youth as essential targets for intervention. We synthesize research on family-focused, school-focused, peer- and community-focused, trauma-focused, cognitive-behavioral, and multisystem interventions in terms of their targets and note variability in their effectiveness. Furthermore, we highlight the continued need for developmentally appropriate interventions that accurately target the mechanisms of action, do no harm, are delivered with fidelity, and encourage active engagement by both interveners and youth.

INTRODUCTION

In 2017, 809,000 youth under the age of 18 were arrested in the United States (Puzzanchera 2019). Of these children, 43,580 were detained and 76,000 were waived to the adult system for prosecution, sentencing, and/or incarceration (Child. Def. Fund 2020). The costs associated with youthful offending, although hard to calculate, are expansive. They include costs to the criminal justice system for arrest, prosecution, and disposition; costs to victims related to physical and mental health injuries, property stolen or damaged, loss of productivity as a result of the crime, and sometimes death; and neighborhood deterioration that is physical, social, and economic, such as a decline in trust, property values, and prosocial commitments. Importantly, the cost of youthful offending also includes the youth themselves, who may lose the opportunity to become contributing members of society.

Across legal, psychological, political, and lay domains, there remains a widely held belief that interventions for youth who offend are futile. With each intervention failure comes a timeworn litany in which youthful offenders are blamed for having too many problems to fix or for having untreatable personality pathologies. But is the issue really the youth or is it that we are not matching youth with appropriate interventions?

By and large, interventions that aim to reduce youthful offending attempt to do so by targeting one or more risk factors. These risk factors, often gleaned from the research literature, run the gamut from being environmental (e.g., community) to institutional (e.g., schools, parents, peers) and/or individual (e.g., thinking patterns and emotional reactions). Regardless of intervention type, there is an underlying assumption that all youth can benefit from some sort of intervention that increases their prosociality and deters them from risk-taking, delinquent, and criminal behaviors. Often, little thought is given to the developmental appropriateness of an intervention or even to the notion that some youth desist naturally from antisocial behavior and that intervening might actually ensnare them in an antisocial trajectory.

To better understand the current state of targeted interventions, this review first highlights key risk factors that are identified in the literature as linked to youthful offending. Broadly, these factors can be categorized as either exogenous, i.e., environmental or institutional, or endogenous, i.e., rooted in individual differences. We also discuss the effectiveness of several rigorously evaluated interventions and provide some recommendations to guide future efforts.

A BRIEF REVIEW OF EXOGENOUS FACTORS

Exogenous factors related to youthful offending include ecological and institutional influences such as concentrated disadvantage (Anderson 1994, Beyers et al. 2001), collective efficacy (Sampson 2008), exposure to violence (Fowler et al. 2009, Gorman-Smith & Tolan 1998), procedural injustice (Tyler & Fagan 2008, Tyler et al. 2015), antisocial peers (Farrington 2005, Monahan et al. 2009), and fragile families (Western et al. 2004).

Concentrated disadvantage is found in neighborhoods where there is a spatial concentration of poverty, reliance on public assistance, joblessness, density of children, residential segregation, social disorder, and lack of political influence (Sampson et al. 2008). A related community factor, lower collective efficacy, refers to inadequate social cohesion and a limited set of common expectations about social control. However, concentrated disadvantage and collective efficacy do not affect all individuals within a community equally. Therefore, there is some debate as to whether these factors are linked directly to youthful offending or whether there are other factors that convey disadvantage to certain individuals. For example, some studies on concentrated disadvantage and offending identify exposure to community violence as an important means

through which disadvantage is transmitted (Aisenberg & Herrenkohl 2008, Baskin-Sommers et al. 2015). Moreover, earlier community violence exposure is linked to greater and more chronic adverse consequences (Guerra et al. 2003, Huesmann & Guerra 1997), including persistent academic underachievement (Delaney-Black et al. 2002), earlier displays of aggression (e.g., fighting) (Durant et al. 1994), and justice system involvement (Hawkins et al. 2000).

Youthful offenders also tend to have a disproportionate number of negative and unfair experiences with both formal (e.g., police, schools) and informal institutions of social control (e.g., families, peers, the labor market) such that their lives are informed by procedural injustices. These experiences are reinforced by socialization processes that are marred by overreactions to minor infractions and violations (Greene 1999, Meares 1997); the permeation of their neighborhoods with antagonistic stop-and-frisk tactics that are public, sometimes violent, and often an affront to their dignity (Fagan et al. 2010, Meares 2014); and the hypersurveillance of their daily, often typical, teenage activities.

In many ways, schools, particularly those in neighborhoods characterized by concentrated disadvantage, aggregate these negative experiences through strict disciplinary practices. These practices are found to have long-term impacts on students who are more frequently suspended and labeled as troublemakers. These students are then more likely to associate with at-risk or delinquent peers, drop out, and have greater justice system involvement, including higher rates of incarceration (Monahan et al. 2014, Pyle et al. 2020). Furthermore, youth who are separated from schools tend to affiliate with antisocial peers (Pyle et al. 2020), including those involved in gangs, which increases engagement in offending (Farrington 2009, Monahan et al. 2009).

A poor relationship with schools as a factor in youthful offending often co-occurs with a poor relationship with parents. Neglectful, ineffective, and abusive parenting is associated with an increased risk for antisocial behavior and greater involvement with delinquent peers (Chung & Steinberg 2006, Pardini et al. 2015). Often, families of youthful offenders experience higher rates of domestic violence, substance abuse (Loeber & Stouthamer-Loeber 1986), family member criminality (Pyle et al. 2020), and family disenfranchisement from the labor market. For instance, youth observe how family members and other adults are either ignored or poorly treated by the labor market. For that matter, youth often discover that members of their own families are not likely to recommend them for jobs due to concerns over the youth's behavior and beliefs (Wilson 2009). These early and enduring experiences with formal and informal social institutions shape the thinking patterns of youthful offenders, which, in turn, relate to internalized processes that are used to navigate their social world.

BRIEF REVIEW OF ENDOGENOUS FACTORS

Endogenous factors, or internalized processes, encompass thinking, emotion, and behavior patterns. For youthful offenders, these factors include distrust (e.g., Malti et al. 2013), anger and hostility (e.g., Dodge 1980), emotional reactivity (e.g., Modecki et al. 2017), risk-taking and impulsivity (e.g., Steinberg 2008), and mental health problems (e.g., Grisso 2008).

Distrust is a cognitive style of interpreting others' intentions and behaviors as undependable, unsupportive, and dishonest. It is often based on an accumulation of prior experiences with unmet expectations that affect social information processing, such that interactions are entered into with suspicion. Additionally, social cues that are suggestive of untrustworthiness become increasingly salient and almost unshakable. As a result, others' intentions and conduct are frequently misconstrued, leading to interpersonal problems and increased antisocial behaviors.

Another cognitive style that interferes with social functioning and is associated with increased offending is hostile attribution. Here, individuals interpret others' behaviors as having antagonistic

intent, even when the behavior is ambiguous or benign. Youth who routinely construe others' intentions as hostile tend to use aggression to defend themselves against the possibility of harm or to retaliate when they perceive, even inaccurately, that they have been harmed. Hostile attribution styles not only influence the use of aggression but also are self-perpetuating. Youth with hostile attribution styles are often excluded from prosocial relationships, which then limits their ability to test their hostile perceptions and learn more positive behavioral reactions (Verhoef et al. 2019). Thus, they develop cognitive scripts that reoccur, time and again.

Endogenous factors such as distrust and hostile attribution are reinforced by affective processes, including a youth's level of emotional reactivity. For example, youth with high levels of negative emotionality are more likely to perceive social situations as threatening and react, almost in a habitual way, with suspicion and hostility (Boxer & Sloan-Power 2013). Moreover, conceptualizations of risky and impulsive behavior often stress individual differences in positive (seeking experiences that feel pleasurable, thrilling, or exciting) (Zuckerman & Kuhlman 2000) or negative affect (seeking experiences that reduce or relieve negative affective states, such as extreme distress, sadness, and anger) (Leyro et al. 2010) as important in the development and maintenance of these behaviors. For some individuals, the tendency to engage in high-risk behaviors is motivated by thrill or pleasure seeking. For others, it is driven by an inability to tolerate distress. Finally, for a subset of individuals, it can be motivated by a combination of these emotional drives (Loewenstein et al. 2001). These tendencies are maintained over time (Hiemstra et al. 2019, Huesmann & Guerra 1997) and youth become less likely to develop strategies that allow them to appropriately regulate their emotions (Eisenberg et al. 1994), adjust them in response to contextual demands (Schweizer et al. 2020), and let go of habitual reactions even in the presence of new information.

A youth's cognitive styles, capacity for managing their emotions, and engagement in risky and impulsive behaviors also relate to the onset and maintenance of mental health problems (Schweizer et al. 2020). Therefore, it is no surprise that approximately 50–75% of the two million youth involved in the juvenile justice system meet diagnostic criteria for a mental health disorder (for review, see Underwood & Washington 2016). It is estimated that two-thirds of detained youth report serious mental health problems and up to 80% of incarcerated juveniles have at least one mental health disorder meeting diagnostic criteria. Some mental health problems and disorders appear over-represented in justice-involved youth, including trauma symptomatology.

Among justice-involved youth, the prevalence rates of trauma exposure are quite high. Abram and colleagues (2013) found that 92.5% of justice-involved youth reported exposure to at least one type of trauma, 84% had exposure to multiple traumas, and 56.8% experienced trauma more than six times. Research by Dierkhising et al. (2013) found that almost 30% of justice-involved youth met a formal diagnosis of post-traumatic stress disorder (PTSD) compared to the national average of 5% for youth overall (Natl. Inst. Ment. Health 2018). Youth who have been exposed to trauma and who meet the criteria for a trauma-related disorder are more likely to engage in violence perpetration, perform poorly in school, and have substance-use problems (Lynch 2003, Maxfield & Widom 1996). Research suggests that these negative outcomes may result from the effects of trauma on the developing brain (Cicchetti 2013), leading to aggressive behavioral reactions (Cicchetti & Toth 2005), even to events that appear to be nonthreatening (Fox et al. 2015).

Additionally, disruptive behavior disorders (e.g., conduct disorder, oppositional defiant disorder) are prevalent among justice-involved youth. Approximately 40–50% of these youth meet formal diagnoses reflective of disruptive behavior compared to 6% of their counterparts in the general population (Teplin et al. 2006, Underwood & Washington 2016). Youth with conduct disorder display a chronic pattern of behaviors that violates the rights of others or societal norms in several ways (e.g., aggression to people or animals, destruction of property, theft, rule violations). Moreover, approximately 32% of youth with conduct disorder meet an additional specifier

of callous-unemotional traits (defined as "limited prosocial emotions" in the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition). Callous-unemotional traits are important for identifying a subgroup of antisocial youth who show increased risk for early-onset delinquency and demonstrate stable delinquent and antisocial behavior (Frick 2009).

Nonetheless, the relationship between mental health problems and youthful offending is complex. It is possible that this relationship evolves from a common set of risk factors (e.g., exposure to violence, experience of maltreatment, etc.). It is also possible that certain cognitive (e.g., distrust, hostile attribution) and affective (e.g., emotional reactivity, inability to tolerate distress) styles influence the development of various mental health problems, ultimately increasing engagement in risky behaviors and interpersonal difficulties. Importantly, many youths with mental health problems or disorders (e.g., PTSD, depression) do not engage in offending behavior (Grisso 2008). Thus, although mental health problems do not lead to youthful offending, they do make it difficult for youth to break out of offending patterns, once initiated. Therefore, the combination of various endogenous factors reinforces habitual and persistent patterns of thinking and behaving that further entrench youthful offenders in a life marred by criminality and justice involvement.

CONSIDERING EXOGENOUS AND ENDOGENOUS FACTORS FOR INTERVENTIONS

Decades of research have established the importance of exogenous and endogenous factors for youthful offending. Findings from these studies have influenced the development of interventions aimed at preventing the initiation and maintenance of offending. Interventions focused on exogenous factors target components of inequality in an attempt to improve the lives of youth and decrease their exposure to adverse experiences. Thus, these types of interventions are directed at improving parent education and skills for child management, increasing vocational opportunities (in part by promoting compliance in school settings early in development), offering teacher and law enforcement training to address implicit bias, and "curing" violence, among other strategies. In these cases, interventions are undertaken to make improvements in key environmental areas but often do not provide youth with new scripts to interpret these changes or with skills to take advantage of opportunities.

Interventions that focus on endogenous factors provide strategies for addressing trauma, problematic cognitions, and antisocial behaviors that are assumed to affect risk for interaction with and continued involvement in the justice system. However, thinking and behavioral patterns are learned and reinforced through experiences with the environment. Therefore, participation in these interventions becomes a tug of war in which youth are expected to accomplish cognitive and behavioral change without regard for the exogenous factors that vie to pull them back into the very social environments that put them at risk for offending. Thus, although modifications in cognitive schema and other strategies are necessary, they may be insufficient to produce lasting change.

Nonetheless, some interventions attempt to address the interplay of both exogenous and endogenous factors. These programs arise from an understanding that youthful offenders bring views with them that are grounded in adverse life experiences shaped by exogenous processes. They also recognize the importance of addressing disparities in environmental conditions, such as increasing access to material resources and fair, high-quality education; improving neighborhood safety while at the same time ensuring procedural justice; providing opportunities for enriching experiences; and intervening in fragile home environments. Such programs tend to be multisystemic and target structural conditions that are specific to a youth's environment, expand individual skills, and change the ways youth make sense of and react to their life.

In this review, we discuss several interventions that target key exogenous and endogenous factors that contribute to the onset and maintenance of youthful offending. First, we provide a brief overview of interventions focused on exogenous factors related to the family, school, peers, and community. Second, we discuss interventions focused on endogenous factors related to trauma, cognitive distortions, and mental health problems. Third, we summarize interventions that target multiple systems simultaneously. It is important to note that our review does not cover all available interventions. Instead, we focused on interventions with a well-developed corpus of research implemented in several geographic areas. Finally, we discuss key considerations and next steps for intervention science as it relates to youthful offending.

INTERVENTIONS TARGETING EXOGENOUS FACTORS

Here, we present interventions focused on disrupting coercive parenting techniques, draconian management practices in schools, antisocial peer affiliation, and community mistrust. The primary target of these interventions is some aspect of the exogenous systems that influence youthful offending.

Family-Focused Interventions

Research places heavy emphasis on the role of harsh and inconsistent parenting characteristics in the development of delinquency, aggression, conduct disorder, and callous-unemotional traits. Such behaviors include those that are physical (e.g., spanking, hitting), verbal (e.g., yelling, threatening), and unpredictable in terms of discipline (Lysenko et al. 2013). Additionally, parent–child relationships rife with conflict often generate a coercive cycle in which the parent and child escalate their negativity, reciprocally reinforcing the problematic behaviors of the other (Gershoff 2002, Hoeve et al. 2009, Moffitt 1993, Patterson & Fisher 2002, Patterson et al. 1992, Trentacosta et al. 2019, Waller et al. 2013).

Harsh and inconsistent parenting has been the target of several interventions designed to reduce or prevent antisocial behavior among youth. Perhaps one of the most well-studied programs is parent management training (PMT). PMT is a skills-based program aimed, primarily, at the parents. The training consists of 12–16 weekly sessions during which parents learn core skills, role-play them with the therapist in session, and then practice skills with their child at home (Kazdin 2008). Sessions are designed to help parents identify, describe, and observe but not overreact to a key problematic behavior; implement positive reinforcement through a praise-and-point incentive system; and learn how to effectively apply time-outs, reprimands, and specific punishments. PMT coaches parents to consistently use effective parenting strategies that balance positive involvement with appropriate discipline.

Numerous studies provide support for PMT. Small to medium improvements have been documented for parental discipline (Kazdin 1997), reductions in coercive parent–child interactions (Brestan & Eyberg 1998), and decreases in youth noncompliance, aggression, delinquent behavior, and arrests (Brestan & Eyberg 1998, Forgatch & DeGarmo 1999, Kazdin 1997, Maughan et al. 2005, Piquero et al. 2016). Moreover, one variant of PMT (PMT–Oregon Model) resulted in small but significant effects for changes in symptoms of conduct disorder and parental stress (Wash. State Inst. Public Policy 2019c). However, some research indicates that not all families benefit equally from PMT. Social and economic disadvantage, single-parent status, and severity of child behavior have been shown to decrease attendance and gains from the training (Kazdin et al. 1993, Reyno & McGrath 2006, Serketich & Dumas 1996). Understandably, parents who experience economic hardship, work multiple jobs, and live in communities with lower social support may find it difficult to participate in the frequent sessions required of PMT.

Another approach, functional family therapy (FFT), differs from PMT in that sessions include the entire family so as to improve parent–child communication, reduce the cycle of coercive interaction, discuss family roles as a way to set boundaries, and develop problem-solving and negotiation skills focused on acceptance and respect (Parsons & Alexander 1973). FFT targets the entire family as if it were a maladaptive system, of which the child is only one part. It is administered in 12 sessions over 3–5 months (Alexander et al. 2000). Early sessions emphasize ways to promote engagement and motivation for change as well as build trust between the clinician and the family. The middle set of sessions targets behavior change, with the clinician and family working to develop and implement individualized change plans and improve communication skills. The final set focuses on generalizing behavior to new situations, preventing relapses, and providing community resources for continued engagement with the family. FFT has been applied in a variety of multicultural and multiethnic contexts and targets 11–18-year-old youth who are generally justice-involved or at risk for delinquency, violence, substance use, conduct disorder, and/or other behavioral problems.

Several studies demonstrate that FFT reduces the onset of offending, nonviolent and violent recidivism, and substance use (Alexander et al. 2000, Barton et al. 1985, Gordon et al. 1995, Sexton & Turner 2010). In one analysis, recidivism rates for felony crimes were approximately 40% lower for youth in FFT compared to a treatment-as-usual group (Wash. State Inst. Public Policy 2019b). FFT also improves family interactions and general functioning (Alexander et al. 2000, Celinska et al. 2013). Moreover, FFT shows some reduction in antisocial behavior even among youth displaying callous-unemotional traits (Hawes et al. 2014, White et al. 2013). Across programs, though, the effect sizes tend to be small. This may be because FFT targets the most severe and chronic youthful offenders and their families. Although change is possible, it is made difficult by the severity of the youth's presentation and the various psychosocial risk factors that appear in a family unit with a justice-involved child.

FFT and PMT can be effective; however, the family exists within a larger network of social systems that may constrain the potential benefits derived from FFT and PMT. Particularly, as youth get older, their experiences at school and with peers exert an increasingly significant influence on their development.

School-Focused Interventions

A vital exogenous factor affecting youth is the school setting. Schools are one of the most fundamental societal institutions charged with socialization. They are responsible not only for academic success but also for preparing students to assume social and occupational roles by teaching youth to become critical thinkers, fostering self-reliance, improving self-control, and imparting skills needed for reasoning, decision-making, problem-solving, and interpersonal effectiveness. Thus, schools play a big part in cognitive, affective, and behavioral development, making their effectiveness critical for youth success.

Beginning in kindergarten, schools become the place where children spend most of their structured time, and research demonstrates that staying in school is one of the most significant protective factors against youthful offending (Anderson 2014). However, studies also indicate that schools are the largest feeders into the juvenile justice system (Malcolm 2018), primarily through the imposition of zero-tolerance and exclusionary interventions. These practices rest on the idea that even the most minor of infractions require swift and immediate sanctions if both general and specific deterrence are to be achieved. These interventions include suspension, expulsion, and the presence of school resource officers.

Research on zero-tolerance clearly documents the deleterious consequences of these interventions. By and large, these practices have been applied to minor and nonviolent behaviors,

including unruliness, swearing, truancy, and disorderly conduct (Kupchik 2016). As a result, they contribute to a school-to-justice system pipeline by increasing school-based arrest rates and court referrals, ensnaring youth in criminal offending trajectories. Zero-tolerance interventions also decrease youth trust in school and school personnel and increase academic failure and school dropout (Hirschfield 2018). They have been shown to adversely impact mental health and increase involvement in delinquency among low-risk youth (Malcolm 2018, Wolf & Kupchik 2017). There also is no evidence that these interventions reduce school disruptions or violence and may, instead, buttress rather than diminish antisocial behavior and increase recidivism (Lacoe & Steinberg 2019, Tobin et al. 1996).

In response to the ineffectiveness of these punitive approaches, school-focused interventions rooted in empirically based knowledge of the social and emotional development of youth were created. Social and emotional learning interventions employ a variety of techniques to enhance cognitive and social skills for either the school population at large (universal intervention) or those at high risk or already involved in antisocial behavior (targeted intervention). Some meta-analyses of school-focused programs suggest that they have modest effects on reducing aggressive and related disruptive behaviors. For instance, Durlak et al. (2011) report small effect sizes for aggression, delinquency, and prosocial conduct and medium effect sizes for social and emotional skill development (see also Wilson & Lipsey 2007). Meta-analyses also suggest that these programs produce larger, but still relatively small, effect sizes for youth who are at the greatest risk of antisocial conduct or who already have higher base rates of involvement (Wilson & Lipsey 2007). Interestingly, systematic reviews of programs aimed at youth 15 years and older do not replicate the small effect sizes reported in other analyses (Kovalenko et al. 2020).

Unfortunately, these meta-analyses do not offer a close enough look at school-focused interventions to be able to assess what actually gets delivered by these interventions, which students are most likely to benefit from participation, or whether effectiveness is maintained over time. Consequently, we highlight three interventions that target factors related to social and emotional development. Two are universal interventions and one targets high-risk youth. They all include components aimed at improving social and emotional learning, but they also provide training for teachers to assist them in communicating with students in developmentally appropriate ways, delivering intervention curricula, and creating more positive school environments.

Life-skills training (LST) is a universal intervention aimed at middle school students that addresses cognitive, attitudinal, and psychosocial factors linked to adolescent substance use, aggression, and violent behavior (Botvin & Griffin 2004). Over three years, classroom teachers utilize various techniques, including group discussion, role modeling, practice, and positive feedback to enhance personal self-management and social resistance skills. Students engage in activities in which they learn how their self-image influences their behavior; how to set and carry out goals; how to make more effective decisions and solve problems; how to better handle stress; and how to rise to challenges. They also learn how to communicate more effectively, including ways of saying no and avoiding aggressive responses. Additionally, students are taught how to evaluate information about substance use and violence and how to avoid pressures to engage in these and other risky behaviors. Students learn anger management and conflict resolution skills as well. They practice these skills in school under the guidance of teachers who provide feedback and reinforcement but are also given homework assignments to practice in other social settings.

There have been several evaluations of LST's effects on a variety of antisocial behaviors (e.g., illicit substance use, violence, delinquency). In terms of substance use, a six-year randomized control trial (RCT) of a predominantly white sample of middle-class students found small but statistically significant reductions in tobacco, alcohol, and marijuana use, whether it was use of a single substance, polydrug use, or heavy consumption (Botvin et al. 1995). Similarly, in a diverse sample

of sixth-grade students, LST appeared to prevent and reduce involvement in youthful offending behavior, including verbal aggression, physical fighting, and delinquent acts (Botvin et al. 2006).

Promoting Alternative Thinking Strategies (PATHS) (Greenberg et al. 1995) is another multiyear, universal intervention. PATHS provides developmentally appropriate curricula to children in grades K–6 to reduce aggression and other forms of disruptive behavior as well as improve the classroom climate. The curriculum changes with each grade level, building on skills learned from prior lessons. PATHS aims to impact self-control, emotion regulation, self-esteem, interpersonal relationships, and problem-solving through targeted lessons delivered two to three times a week by classroom teachers. Lessons are supplemented by daily exercises that connect cognitive-affective skills with real-world experiences.

Overall, RCTs for PATHS have produced mixed and small effect sizes on a wide range of outcomes, including externalizing behaviors (e.g., aggression), internalizing symptoms (e.g., depression, anxiety), emotional regulation, future planning, and distress tolerance (Fishbein et al. 2016). In another RCT (Crean & Johnson 2013), small effect sizes were found for aggression, acting out, and conduct problems (e.g., rule-breaking, aggression). Somewhat stronger effects were found for aggressive problem-solving, hostile attribution, and aggressive interpersonal negotiating. Furthermore, PATHS improved academic performance, although the effect sizes, again, were small (Schonfeld et al. 2015).

Although LST and PATHS are shown to improve social and emotional skills for elementary- and middle school–age youth, there is some reason to believe that the typical developmental features of adolescence may undo those gains unless intervention efforts are continued through high school. Adolescence is a time when peer influence on behavior is at its highest point. It also is when youth, normatively, begin to move away from and challenge the authority of parents and other conventional agents of socialization. Furthermore, adolescence is a period when risk-taking and antisocial conduct are most pervasive and can either remain limited to this developmental period or persist into adulthood (Moffitt 1993). Despite this understanding of life course development, very few school-focused interventions carry over into adolescence. This is true especially for youth who are at the highest risk for continuing involvement in antisocial behavior. The Fast Track intervention is an exception.

Fast Track is a targeted intervention that identifies high-risk children and teaches developmentally appropriate social and emotional skills to youth from first through tenth grade. Of note, a modified version of the PATHS curriculum is included in Fast Track for grades 1–5, supplemented by parent training groups, child social skill training groups, home visits, and peer pairing (Bierman et al. 2010). During middle school, the primary intervention activities are parent and youth group meetings and forums to focus on age-appropriate developmental issues, such as effective parenting, resisting peer pressure, sex and substance awareness education, and vocational planning. In grades 7–10, individualized plans are developed for each youth, and ongoing assessments are done to fine-tune these plans based on youth and parent functioning. Unlike the other two programs, Fast Track also addresses family risk factors, specifically as they relate to communications between the school and parents and parent–child interactions.

A series of evaluations (Conduct Probl. Prev. Res. Group 1999, 2002; Dodge & Conduct Probl. Prev. Res. Group 2007) document small to medium effects of Fast Track on a variety of outcomes among elementary school children. In comparison to high-risk control children, those receiving the intervention demonstrated improvements in behavior problems, less aggressive behavior, more effective interactions with peers, enhanced social and emotional skills, and better academic and social performance. Parenting risk factors were also impacted positively with greater displays of warmth, less reliance on physical punishment, and more involvement with the

school. Unfortunately, early indicators of academic improvement were short-lived and by third grade had dissipated (Bierman et al. 2013, Conduct Probl. Prev. Res. Group 2002).

By and large, there were no consistent intervention effects on problem behaviors, including antisocial behavior and deviant peer involvement, or on the development of social skills during the middle school years. It has been suggested that this may be due to the segregation of Fast Track students in their own classes, increasing antisocial peer influence and negative teacher evaluations of these students' potentials, less structured intervention activities, and greater developmental challenges faced by middle school youth (Bierman et al. 2010, 2013). However, in ninth grade, the greatest improvements, specifically for conduct and externalizing disorders as well as for antisocial behavior, were found but only for youth in the highest risk category (Bierman et al. 2010, Dodge & Conduct Probl. Prev. Res. Group 2007). Unlike other interventions, data do exist on the longer-term effect of Fast Track on antisocial behavior. During high school, Fast Track appears to have a positive influence on rates and onset of arrest and delayed the onset of the most serious forms of offending. However, it appears not to affect overall self-reports of antisocial behavior (Bierman et al. 2010).

Although it may seem that Fast Track is most successful at the elementary school level when the intervention is most intensive and children are most responsive, one study indicated that at age 25, those who received the Fast Track intervention, generally, were significantly less likely to demonstrate internalizing, externalizing, or substance-use problems than those in the control group (Dodge et al. 2015). The intervention, however, did not affect anxiety, depression, somatic disorders, or marijuana use. But it positively impacted serious violent crime and drug convictions, although not the commission of property or public-order crimes. Results for involvement in violent crime were mixed, depending on the intervention cohort. Fast Track appears not to affect the likelihood of graduating high school, going on to higher education, or being employed full-time. The intervention's impact on participants' parenting practices was mixed with marginal effects on parenting efficacy and no effect on either coercive parenting or parenting satisfaction.

LST, PATHS, and Fast Track are each considered promising school-focused interventions; however, it is important to keep in mind several points. First, acts of aggression, delinquency, and other antisocial behaviors are measured primarily by teacher reports and sometimes by youth self-report but are not validated by justice or social service system records. Consequently, there may be some underreporting of conduct problems. Second, many evaluations report issues with treatment fidelity yet do not measure the impact on evaluation results. Third, few studies considered the long-term effects of the intervention and when longer-term studies have been conducted, such as with the Fast Track program, a significant drop-off in program participants is often noted. However, we do not know whether attrition is due to truancy on the day of data collection, school dropout, or some benign situation, such as moving to a new neighborhood or school. In light of the importance of viewing schools in terms of their exogenous impact on youthful offending, school-focused interventions would necessarily need to change various aspects of the school climate, including perceptions of and commitment to the intervention by the school community, teacher preparedness to effectively deliver the intervention, consistency of the intervention with school goals and policies, and financial considerations.

Peer- and Community-Focused Interventions

In neighborhoods characterized by concentrated disadvantage, adverse experiences with formal institutions of control are shown to increase a youth's association with antisocial peers. Perhaps the most serious form of association is that of gang membership. Gang membership is linked with increased involvement in serious and violent crime (Pyrooz et al. 2016), including escalations in

gun homicides (Howell 1999), and high levels of community fear and victimization. In light of these extensive effects on the community, interventions have been developed to prevent membership in gangs and reduce violence. Some of these interventions follow the traditional path of utilizing law enforcement for program delivery. Most notable among these strategies are Operation Ceasefire and Cure Violence, which have been replicated widely across the United States.

Operation Ceasefire is a focused deterrence strategy that relies primarily on police, probation, and parole officers to deliver a message directly to members of gangs that continued engagement in violence will be met with increased and severe enforcement at all levels of the criminal justice system and for all types of illegal behavior, from nonviolent and petty street crime to probation and parole technical violations. Additionally, there are strong recommendations against bail and for harsher penalties. This message is also delivered by "gang workers" and community groups who have contact with members of gangs. Reports of negative sanctions for members of gangs who remain undeterred are disseminated among their peers as a general deterrence strategy (Zimring et al. 1973). Aggressive law enforcement practices are the foundation of Operation Ceasefire, but there are some social service referrals related to housing, education, and employment (Braga & Weisburd 2014).

Although strategies such as Operation Ceasefire rely on threats of ramped-up sanctions to reduce violence, others, such as Cure Violence, avoid the direct involvement of law enforcement and the threat of punishment and instead employ a public health model. Briefly, Cure Violence views violence as a contagious disease that can be treated by targeting those most likely to become or who already are "infected." It aims to interrupt the transmission of violence by mediating conflict and reducing the risk of retaliation between groups. Furthermore, it works to change community norms and attitudes regarding the use of violence through public events and social campaigns. Cure Violence employs outreach workers and violence interrupters, many of whom have significant criminal, gang, and incarceration histories, to use their connections in the community to deliver antiviolence messages, act as prosocial role models, de-escalate intergroup conflicts, and refer youth to educational, financial, medical, and other community resources (**https://cvg.org/**).

Overall, evaluations of Operation Ceasefire and Cure Violence have shown mixed results. Although many of the evaluations demonstrate some reductions in group violence, based on the designs of the evaluations, we cannot say that the observed effects were the direct result of the programs themselves (Grunwald & Papachristos 2017, Papachristos & Kirk 2015). Instead, there are several competing possibilities as to what drove the observed changes in the rates of gang violence. First, these programs were often implemented in areas already saturated by other gang intervention efforts. Therefore, it is not possible to say whether the noted changes were due to Operation Ceasefire or Cure Violence or whether it was the combination of programs that was responsible for the decline in violent crime rates. Second, the evaluations did not assess the effects of wider societal trends known to impact rates of violence, such as selective incapacitation, mass incarceration, or changes in drug and labor markets. Consequently, it may be the removal of violent offenders from the community and into correctional facilities that drove down the rate of violent crime. Third, the success of these programs was established by using aggregate violent crime statistics (number of crimes in an area) that do not account for the people who are committing crimes. Thus, we do not know "who" is or how many are contributing to these numbers and whether actual targets of the interventions are involved in violent crime. Finally, we do not know whether the targets of the intervention actually changed their behavior as a result of the program.

It is important to note that these programs focus heavily on only one system in which youth are involved: the criminal justice system. However, youthful offenders, including members of gangs, are involved in multiple systems that contain risk factors that affect their participation in violence. These systems, such as families and schools as well as other exogenous factors, including peers,

procedural justice, and the community at large, are also learning environments in which youth develop perceptions and behavioral responses to their experiences. These programs were designed without considering the interplay of broader exogenous factors.

Additionally, several aspects of these programs run counter to the current understanding of adolescent cognitive-affective development, specifically around issues of trust and perceptions of risk. It has been suggested that programs such as Operation Ceasefire bolster perceptions of procedural injustice through their hardline approach to enhanced sanctions, which may foster distrust in authority broadly and in law enforcement specifically (Fagan 2002). Similarly, Cure Violence has been implicated in promoting youth distrust, particularly of the police, due to the antagonistic relationships that many violence interrupters and outreach workers have with law enforcement and display to youth in the programs (Wilson & Chermak 2011). Finally, youthful offenders with impulse control issues are known to ignore risks and react poorly to threatening messages, including the threat of enhanced sanctions and those related to the use of violence (Fagan & Piquero 2007, Farrington & Loeber 2000, Loughran et al. 2012).

INTERVENTIONS TARGETING ENDOGENOUS FACTORS

The majority of interventions targeting individuals focus on addressing thoughts and behaviors and typically employ some variant of cognitive-behavioral therapy (CBT; skills focusing on altering thoughts, feelings, and behaviors) or behavior therapy (changing behavior through punishment and rewards). In this section, we describe and review evidence for individual-focused interventions related to addressing cognitive distortions, emotion reactivity, and risky behavior.

Cognitive-Behavioral Therapy

CBT is one of the most researched forms of psychotherapy. It is based on a cognitive model positing that how an individual perceives a situation, more so than the situation itself, determines their reaction. CBT helps individuals identify goals and overcome obstacles by implementing skills that challenge cognitive distortions or flawed thinking, regulate emotions, determine triggers and deliberately structure time to promote behavior change, and enhance problem-solving and communication skills. For example, a CBT approach might work with a youth to express thoughts reflective of hostile attributions ("He intentionally bumped me. I know, he just looked at me the wrong way.") and teach the youth to identify alternatives to that thought by asking for specific counter-evidence (e.g., "Is there substantial evidence for my thought? Is there evidence contrary to my thought?") or examples of when that thought was not supported (e.g., when the other person did something kind or said something supportive). As another example, CBT might address the anger that a youth experiences by identifying the proximal antecedents of an anger outburst and intervene early in the process by using breathing or distraction techniques. Finally, a behavioral approach can establish a contingency program that rewards youth when they engage in a specified positive behavior. Cognitive-behavioral approaches can take many forms and combine different skills to address the needs of the youth.

Several meta-analyses examining CBT in offender populations have noted significant but small reductions in recidivism among juveniles (Lipsey et al. 2001, Pearson et al. 2002, Wilson et al. 2005). CBT also yields significant but small effects for reducing externalizing, aggressive, and disruptive behaviors (Antshel et al. 2012, Kazdin et al. 1992, Lochman et al. 2011). Generally, compared to a focus simply on behavior change, specific cognitive restructuring and emotion regulation skills appear to drive intervention effectiveness. Despite the small effects, research highlights the utility of providing individual skills targeted toward key endogenous factors, such as patterns of thinking, emotionality, and risky behaviors, to promote prosociality.

However, there is mixed evidence regarding the effectiveness of CBT-based interventions for youth with clinical symptoms that fall into the disruptive behavior disorders category (e.g., youth who display chronic and severe rule-breaking, defiance of authority, aggression and violence, lying, and/or lack of empathy). Across several studies, small reductions in clinical symptoms and antisocial behavior are reported. Yet others report no change in symptoms and behavior. And studies, specifically on callous-unemotional traits, show worse antisocial behavior following treatment (Wash. State Inst. Public Policy 2019a, Wilkinson et al. 2016).

One program that shows promise, including for youth with callous-unemotional traits, is the Mendota Mental Health Institute in Madison, Wisconsin. Mendota is a psychiatric hospital for court-ordered youth, many of whom are there for violent crimes. The intervention utilizes cognitive-behavioral and behavioral therapy techniques in individual and group therapy to promote behavior change, manage anger, educate youth on substance abuse, and foster social and problem-solving skills. A today-tomorrow point system allows youth to earn points throughout each day and select privileges the next day. Research on this program demonstrates that youth, including those high on callousness, unemotionality, and violent behavior, show reductions in institutional violence, days with security restrictions, and violent offending (Caldwell et al. 2012), sustaining behavioral improvements for at least two years following release (Caldwell et al. 2006).

All in all, there is some evidence that youth with disruptive behavior disorders and who engage in violence show treatment responsiveness in terms of clinical traits. However, there is a need to address whether cognitive-behavioral approaches, particularly in outpatient settings, translate into changes in antisocial behavior and/or sustained treatment (Muratori et al. 2019).

Trauma-Focused Therapy

Many justice-involved youths experience chronic, pervasive, and multiple types of trauma and have been exposed to violence in the community and at home. Trauma experienced in childhood, regardless of whether it is direct or observed, predicts adolescent delinquency, violence, severity of offending, and recidivism (Baskin & Sommers 2014, Kerig & Becker 2015). Reactions to trauma that go unaddressed can impact several endogenous factors, including trust, cognitive and affective regulation, psychological distress (including PTSD, depression), substance abuse, and antisocial behavior. Therefore, therapeutic interventions that target the needs of traumatized youth are crucial. Effective programs for addressing trauma apply CBT to identify and modify unhelpful thinking patterns and avoidance behaviors that result from trauma. For the most part, youth are referred for trauma-focused therapy via social services or other agencies that are already involved with the child. In general, trauma-focused therapies can be administered in outpatient sites, schools, client homes, and individual and group therapy settings.

Trauma Affect Regulation: Guide for Education and Therapy (TARGET) is a manualized, 10-session, cognitive-behavioral treatment for adolescents (Frisman et al. 2008). First, youth are educated about the neurobiology of trauma and PTSD, including how reactions to trauma can overwhelm brain processes and information retrieval. This psychoeducational component contextualizes each youth's experience and establishes a foundation for the core TARGET skills. Second, youth are taught and guided, incrementally, through a set of practice skills labeled FREEDOM (focus to improve self-regulation, recognize triggers, identify emotions, evaluate cognitions, define goals, identify options, and make positive contributions by acting in line with one's values). Finally, youth organize their autobiographical memories and reconsolidate fragmented memories related to trauma.

TARGET shows evidence of effectiveness with youth who are housed in correctional facilities or other residential settings as well as youth who engage in treatment through community-based

programs (Ford et al. 2012, 2013; Ford & Hawke 2012; Marrow et al. 2012). It yields small to medium effects for reducing PTSD symptoms, depression, and violent behavior (Ford & Hawke 2012, Ford et al. 2012, Marrow et al. 2012). Marrow and colleagues conducted a quasi-experimental examination of TARGET compared to treatment-as-usual for youth incarcerated with felony convictions. Results showed significant reductions in PTSD symptoms, depression, conflicts with staff, use of physical restraints by staff, and use of seclusion for youth receiving TARGET. TARGET has been implemented in child protective service and juvenile justice systems, including in Connecticut, Florida, Illinois, and Ohio.

There are several other variants of cognitive-behavioral approaches for directly targeting trauma-related thoughts and behaviors. For example, cognitive processing therapy (CPT) teaches youth ways to become "unstuck" from their negative thinking and avoidance behaviors by sharing detailed accounts of their trauma and learning ways to challenge distorted thinking about safety, trust, power, esteem, and intimacy. CPT is highly effective (large effect sizes) and well-tolerated in both incarcerated adolescents and children exposed to intimate partner violence (Ahrens & Rexford 2002, Chard 2005, Monson et al. 2006).

Another program, Trauma and Grief Component Therapy for Adolescents (TGCT-A) is a manualized intervention that includes several components similar to TARGET and CPT (Saltzman et al. 2017). First, youth are educated about traumatic stress and grief reactions, trained in emotion regulation skills, and provided increased access to social support. Second, youth develop and share their narrative about trauma and loss experiences. Third, they focus on addressing components of their grief. Finally, youth are ushered through problem-solving and planning for the future. TGCT-A has been implemented successfully in schools, community mental health clinics, juvenile justice facilities, and group homes with diverse populations of youth (Olafson et al. 2018, Saltzman et al. 2001). Notably, TGCT-A has been adapted to address exposure to community violence, a type of trauma that youthful offenders experience at disproportionately high rates.

Trauma-focused cognitive-behavioral therapy (TF-CBT) utilizes many of the cognitive and behavioral strategies noted above (e.g., talking directly about traumatic experiences, restructuring inaccurate or unhelpful thoughts, managing emotional distress) but involves a caregiver or residential caretaker in sessions (Cohen et al. 2004, Deblinger et al. 1996). Several randomized clinical trials demonstrate the effectiveness of TF-CBT compared to supportive therapy in reducing PTSD symptoms, but the outcomes for reductions in depression symptoms and externalizing behaviors (e.g., aggression, risky sexual behavior) have been mixed (de Arellano et al. 2014). Recently, TF-CBT has been implemented in juvenile justice facilities and incorporated into more multisystem treatments (Cohen et al. 2016, Everhart Newman et al. 2018, Smith et al. 2012).

Overall, there is growing evidence to support the use of developmentally appropriate trauma-focused therapy with justice system–involved juveniles. Trauma-informed interventions help establish a safe environment, prevent potentially retraumatizing behaviors, and support youth in their recovery from emotional and behavioral problems resulting from trauma symptomatology. Addressing the mental health needs of youthful offenders is essential for promoting safer and healthier youth, families, staff working within the justice system, and entire communities.

MULTISYSTEM INTERVENTIONS

Although there are effective interventions that target specific exogenous systems or endogenous factors, there is some doubt about the reach of those interventions for youth showing chronic and severe offending. As a result, some interventions have been developed that target multiple systems in which youth are embedded.

Multisystemic therapy (MST) is one such intervention, derived from a social-ecological framework (Bronfenbrenner 1974). It stipulates that individual behavior is affected, both directly and

indirectly, by experiences with a myriad of formal and informal systems, including schools, the criminal justice system, labor market, neighborhood, parents/caregivers, and peers, among others. MST further indicates that these systems behave synergistically; interactions with any one system influence those in the others and can promote and/or reinforce youthful offending. For example, a youth who is affected adversely by concentrated disadvantage, community violence, and negative relationships with family, teachers, and police exists in an ecological context where each of these forces builds on the other, creating an environment conducive to the development of distrust, anger, hostility, impulsivity, trauma, or other endogenous factors associated with youthful offending. At the same time, these cognitive and affective responses to exogenous conditions reverberate throughout the ecological context, eliciting social system reactions that can reinforce youthful offending.

MST is focused on mapping out the specific exogenous and endogenous factors that negatively affect the individual youth. The goal is to address these factors to support the development of prosocial conduct. MST does so through the use of specially trained therapists who employ behavioral, cognitive-behavioral, and family systems approaches to change the thinking and behavior patterns of that youth and their families. The success of MST requires the involvement of all stakeholders in that individual youth's life, from family and school to justice system personnel and other members of their social network.

Importantly, behavioral change is possible only if problems in the larger network are also managed. Therefore, MST is practiced at the site of each targeted system. For example, if school problems figure prominently in a youth's constellation, then an MST therapist observes the interactions in context and works with school agents and the youth to turn things around. Similarly, if law enforcement is a major player in promoting or reinforcing antisocial conduct, then similar observations and strategies must be employed there as well. If relevant, MST therapists also observe the youth in the context of peer interactions to determine what factors might be operating to push the youth toward delinquent peers. For instance, MST therapists might identify rejection from prosocial peers as a factor and then develop strategies to reduce associations with antisocial peers. And in the case of community-level systems, such as concentrated disadvantage and exposure to community violence, MST therapists might try to enlist the assistance of neighbors and other sources of social support to mitigate the influence of these factors.

Ultimately, however, it is the family/caregiver that is the lynchpin in the constellation of systems. MST identifies and focuses on the strengths and protective factors that are already present in the youth's family and then teaches family members how to use these strengths to promote change in the youth's behavior. Family risk factors, such as problematic parental skills and family deviance are also addressed, as they are viewed as central to the youth's behavior. Family members are trained to communicate positively and effectively with other members of the youth's formal and informal network, taught how to discourage engagement with deviant peers, find and enroll the youth in prosocial activities, and become more involved with teachers and school personnel. They also are supported by MST team members to address their own problems and redress deficits in problem-solving skills. This is accomplished through the use of behavioral, cognitive-behavioral, and family systems therapies. Youth, family members, and even members of the broader social network are encouraged to reframe negative interactions and apply newly learned scripts that are prosocial and effective in negotiating the environment and assisting the individual youth to achieve prosocial behavior.

MST is a labor- and cost-intensive intervention. It requires 24 hours a day, 7 days a week commitment from the youth, members of their network, and the MST team assigned to the case. It is an intervention that lasts from three to five months and involves intensive supervision from the MST team and of the team by supervising personnel from the program. Observed behaviors

and remedial strategies are continually updated. The intensive nature of MST is a fundamental requirement if problems with specific strategies are to be identified in a timely fashion, new strategies developed and put into place, and continued cooperation from system agents and the youth are to be assured.

By and large, research on MST has found small to medium, but significant, effects across a wide variety of domains, including delinquency, rearrest, out-of-home placement, family functioning, peer factors, youth aggression, psychopathology, substance use, and school performance (Curtis et al. 2004, Ogden & Halliday-Boykins 2004, Timmons-Mitchell et al. 2006, van der Stouwe et al. 2014; **https://www.mstservices.com/**), and across a wide variety of youthful offender subtypes, such as members of gangs, females, and those with sexual behavior problems. These positive outcomes appear to be retained over time. MST Services followed program participants for 22 years post intervention and found that program individuals were still experiencing less involvement with the justice system and drugs and had more positive family and financial experiences than controls who had received only individual psychotherapy (**https://www.mstservices.com/**). Owing to its documented success, MST has been disseminated in 34 states and 15 countries and has served more than 200,000 youth (**https://www.mstservices.com/**). It is important to note that when studies fail to demonstrate MST effectiveness, the most common reason is poor adherence to the MST model. Thus, strict treatment fidelity is essential to the success of MST.

Although MST is the most studied intervention that targets both exogenous and endogenous factors, other programs recognize the importance of involving multiple systems. Multidimensional therapy foster care (MTFC) targets a specific subpopulation that is often thought of as hard to treat and at risk for out-of-home placements. These youth tend to experience significant problems across family, school, and peer domains, and they are often referred to group homes or secure residential facilities where their autonomy and exposure to family and prosocial peers are severely restricted. Such facilities are found to negatively impact youth by reinforcing antisocial behavior through exposure to deviant peers, custodial authoritarianism, and isolation from developmentally appropriate daily experiences (Leve et al. 2012).

MTFC offers an alternative to residential facilities and harnesses the strength of positive role models, from specially trained foster parents and program personnel to prosocial peers and teachers, who model appropriate behavior for youthful offenders and their biological parents (Chamberlain 2003, Chamberlain et al. 2007). Youth reside with foster care families and attend community-based schools for six to nine months. They are provided with a structured and supportive living environment that encourages engagement in prosocial activities and the attainment of social skills. Youth behavior is monitored daily by foster parents and program personnel and positive behavior is rewarded through a point system. Youth and their families of origin are also provided with therapeutic support as they strive to cultivate a more effective and positive home environment. Research demonstrates that MTFC produces medium effects in reducing delinquent acts, violent crimes, days spent in detention, frequency of running away from home, teen pregnancy, and affiliation with delinquent peers as compared to treatment-as-usual. These effects are sustained for at least 24 months (Chamberlain et al. 2007, Eddy et al. 2004).

Another program, Stop Now and Plan (SNAP), employs a multisystemic approach targeting the child, family, school, and community (Augimeri et al. 2007, Burke & Loeber 2015, Pepler et al. 2010). SNAP draws on several skills-based strategies, such as parent and family management, CBT, emotion regulation and control, social skills, and problem-solving. SNAP programming offers a menu of options and can include structured groups for youth focusing on relaxation, behavioral rehearsal/role-playing, and group discussion; structured groups for parents to develop self-control and management strategies; individual mentoring for youth to enhance skills learned in SNAP and become involved in community-based recreational activities; school advocacy and

teacher support; and long-term connections through SNAP-affiliated programs. For the youth, SNAP seeks to reduce emotion dysregulation, impulsivity, and disruptive behavior. Moreover, for the parent and child, SNAP attempts to improve behavioral monitoring, communication, and consistency in parent management. Finally, SNAP targets other exogenous systems (e.g., schools) so that they are aware of the youth's difficulties and encourages them to assist the youth in more effectively navigating their environment.

SNAP is often recommended through clinical, teacher, or police referrals. In one study, boys (mean age 8.5 years old) who received SNAP displayed a significant reduction in aggression, conduct problems, general externalizing behaviors, oppositional defiant disorder symptoms, depression, and anxiety. At a one-year follow-up, improvements in aggression, oppositional defiant disorder symptoms, depression, and anxiety were sustained. However, there was no change in justice system contact (Burke & Loeber 2015). In another study that included boys and girls, SNAP yielded significant and large-sized improvements in self-control and medium-sized reductions in externalizing symptomatology (Augimeri et al. 2018). The effectiveness of SNAP appears related to its combined emphasis on the home environment, child–parent relationships, and changing aggressive behavior and antisocial cognition.

CONCLUSIONS AND FUTURE DIRECTIONS

Youthful offending is influenced by a combination of exogenous and endogenous factors. There is an extensive literature that suggests that these factors are important to consider if we want to understand the behavioral patterns of young people, especially as they may be essential targets for intervention. In this review, we examined interventions in terms of their exogenous and endogenous targets and noted variability in their effectiveness. Although there are several effective programs, the criminal justice system remains filled with young people. This may appear contradictory. However, many youths who engage in offending behavior have not been exposed to effective programs or are only enrolled in programming once they are system-involved. In reviewing various interventions, we are left with three sets of questions: (*a*) What really is effectiveness and how should it be measured; (*b*) in light of the importance of treatment fidelity, how can we assure it; and (*c*) how do we help those showing the most chronic and severe offending patterns and disruptive behavior disorders?

Although there is no gold standard for measuring intervention effectiveness, one criterion should be the absence of iatrogenic effects. In short, interventions must do no harm. According to this criterion, incarceration as a means of deterrence or even rehabilitation would be considered unequivocally ineffective. Incarceration promotes antisocial behavior and ensnares youth in trajectories of chronic offending (Gatti et al. 2009). Similarly, interventions such as Operation Ceasefire and Cure Violence would not be regarded as effective, as some evaluations show heightened violence and stronger affiliation with gangs.

As stated before, youthful offending arises out of a constellation of interrelated exogenous and endogenous factors. Therefore, another criterion for effectiveness is whether the intervention positively impacts a variety of factors rather than just one (De Los Reyes & Kazdin 2008). For instance, the effectiveness of a trauma intervention should be measured not only by a reduction in trauma symptoms but also by decreases in related factors, such as substance use or aggression. Similarly, interventions that target multiple exogenous and endogenous factors in parallel would be considered effective if they demonstrated positive change across the targeted systems. This was the case in the multisystem interventions reviewed here. MST, MTFC, and SNAP not only reliably showed effects on multiple factors but also the changes appeared to be long-lasting.

That said, one theme across interventions that impacts effectiveness is treatment fidelity. For example, with parenting, school, CBT, and multisystem interventions, the positive impact

of these programs was, in large part, determined by how closely the providers adhered to the recommended protocols. Unfortunately, research demonstrates that few interventions are delivered with sufficient fidelity (Onken et al. 2014). Treatment fidelity can be difficult to balance with widespread dissemination, overburdened systems and actors, lack of direct supervision and accountability, and, often, scarce resources. Treatment fidelity is also affected by the commitment and motivation of interveners as well as intervention fit with the sponsoring system's mission and goals. It can be enhanced through a variety of techniques, including standardized training to ensure that all providers acquire the knowledge and skills needed for effective intervention delivery; strategies to reduce deterioration in intervention skills, such as frequent monitoring and follow-up trainings; and the regular completion of checklists by both the provider and the youth to document that key tasks were achieved. Thus, a protocol of both self and external monitoring can be developed to better assure that the intervention was delivered as designed and that the youth received and understood the treatment.

Even when effective interventions are selected and administered reliably, there are still some youths who appear less responsive. For example, youth with conduct disorder and callous-unemotional traits can show change during interventions, but they often do not achieve a "normative" level of functioning. Thus, although we might have effective interventions for many, we do not have them for all, especially not for youth at the highest levels of risk or already involved in persistent offending. In this review, we highlighted the importance of considering exogenous and endogenous treatment targets in tandem. However, it is also essential to individualize the treatment approach based on targets central to the youth's presentation. For individuals with severe and perhaps more complex presentations, the success of an individualized approach requires identifying the specific mechanisms underlying behavior for that particular youth. As an example, a youth with conduct disorder and callous-emotional traits may experience harsh parenting, which promotes antisocial behavior. Additionally, research shows that these youth have blunted emotional expression (Frick et al. 2014), which influences their lack of concern about the consequences of their actions. An individualized approach might integrate a computerized emotion training program to address underarousal with a multisystem approach to address the surrounding exogenous influence. In contrast to generic and static interventions, this individualized approach promotes the initiation, personalization, and maintenance of behavior change by integrating theory and methods across domains.

Youthful offending produces suffering for the individual, their family members, their community, and society at large. The identification of underlying exogenous and endogenous factors can explain why an individual continues to engage in these behaviors despite the persistence of suffering. And a focus on exogenous and endogenous factors highlights targets for alleviating that suffering. However, for there to be progress, the wider society must commit to providing developmentally appropriate interventions that accurately target the mechanisms of action, do no harm, are delivered as designed, and encourage active engagement by both interveners and youth.

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