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RECEIVED 01 March 2023

ACCEPTED 06 June 2023

PUBLISHED 23 June 2023

CITATION

Sheerin KM, Brodell R, Huey SJ Jr and
Kemp KA (2023) Applying ecological systems
theory to juvenile legal system interventions
outcomes research: a measurement
framework.

Front. Psychol. 14:1177568.

doi: 10.3389/fpsyg.2023.1177568

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Applying ecological systems theory to juvenile legal system interventions outcomes research: a measurement framework

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Intervention research and development for youth in the juvenile legal system (JLS) has often focused on recidivism as the primary outcome of interest. Although recidivism is an important outcome, it is ultimately a downstream marker of success and is affected by changes in other domains of youths' lives (e.g., family and peer relations, neighborhood safety, local and state-level policies). Thus, the present manuscript proposes the application of ecological systems theory to selecting outcomes to assess intervention effects in JLS intervention research to better capture proximal and distal influences on youth behavior. To that end, we first provide an overview of the strengths and limitations of using recidivism as an outcome measure. Next, the current application of social ecology theory to existing research on both risk and protective factors of JLS involvement is discussed, as well as existing work on assessing social-ecological domains within intervention studies. Then, a measurement framework is introduced for selecting pertinent domains of youths' social ecologies to assess as intervention outcomes, moderators, and mediators. To facilitate this, we provide examples of concrete constructs and measures that researchers may select. We conclude with potential new avenues of research to which our proposed framework could lead, as well as potential limitations of implementing our framework.

KEYWORDS

juvenile justice, intervention outcomes, children and adolescence, delinquency, ecological systems theory

1. Introduction

Each year, at least 700,000 youth enter the juvenile legal system (JLS) in the United States ([Office of Juvenile Justice and Delinquency Prevention, 2021](#)). Youth within the JLS represent a population vulnerable to marginalization, given that Black, Latinx, and gender and sexual minority youth are disproportionately arrested and incarcerated ([Hirschtitt et al., 2018](#); [Jonsson et al., 2019](#); [Puzzanchera and Hockenberry, 2019](#); [Puzzanchera and Hockenberry, 2021](#)). Contact with the system has negative sequelae for these youth, who have documented difficulties with their behavioral health ([Tolou-Shams et al., 2019](#); [Kemp et al., 2020](#)), academic achievement ([Brown et al., 2008](#)), peer relations ([Miller-Johnson et al., 1999](#); [Holloway et al., 2022](#)), and family functioning ([Tapia et al., 2018](#); [Folk et al., 2020](#)). As a result, the development and

evaluation of efficacious interventions for youth in the JLS has remained a priority for researchers and policymakers alike.

Recidivism, defined as the commission of an offense after a youth has previously committed an offense (Blumstein and Larson, 1971), has most frequently been assessed through the use of official court records in intervention outcome studies (Olsson et al., 2021). There are several reasons that JLS intervention researchers have focused on recidivism. First, one of the main foci of the JLS is to enhance public safety and prevent further system contact (Office of Juvenile Justice and Delinquency Prevention, 2023). As such, understanding how intervention efforts impact recidivism is a system-level priority. Second, official recidivism data can be obtained with relative ease (e.g., through partnerships with legal systems) as compared to more in-depth in-person data collection (Harris et al., 2011). Third, assessing recidivism improves the ability to compare program effectiveness across states and systems, which, in theory, should also lead to the adoption of interventions beyond the jurisdiction they were originally tested in Sentencing Project (2010).

Although there are several strengths in using recidivism as the primary outcome of intervention effects, there are also several notable limitations. For example, official court records may underestimate the number of new crimes a youth may commit, with some estimates suggesting a thirty-to-one ratio between reported and actual crimes (Elliott, 1995). The assessment of recidivism has also varied across studies, with some researchers measuring self-reported delinquency, rearrest, reincarceration, or adjudication (Harris et al., 2011; Olsson et al., 2021). These disparate indices become even more varied when comparing across systems internationally (Fazel and Wolf, 2015). Caudill and Trulson (2022) also indicated the use of these varied assessments of recidivism among JLS-involved youth can lead to variable effect sizes across studies. In addition, recent work by Padgaonkar et al. (2021) indicates official rearrest rates may be influenced by racial bias such that Black JLS-involved youth are more likely to be rearrested than their White peers, despite committing fewer self-reported offenses prior to being rearrested. Thus, there are clear limitations to relying on recidivism as the primary outcome of intervention efficacy.

In JLS models aimed towards reducing recidivism (e.g., the Risk-Needs-Responsivity Model; Brogan et al., 2015), interventions are viewed as indirectly affecting recidivism through ameliorating a variety of “criminogenic” risk factors. In fact, recidivism is typically a distal outcome of most interventions and can be considered a downstream marker impacted by more proximal social determinants of health. The stated goal of many interventions for JLS-involved youth typically focus on antisocial and delinquent behaviors more broadly, often through changing individual youth factors (e.g., impulsivity, substance use) along with family, peer, school, and systems factors (Brogan et al., 2015). These changes are then thought to impact recidivism. In other words, recidivism is often the last domino to fall after several other areas have been addressed. To that end, it would appear more appropriate for researchers to use other indices beyond recidivism to better understand the more proximal and developmentally oriented effects interventions may have. Despite this, work by Schwalbe et al. (2012) indicate that measures beyond official recidivism records are inconsistently collected across studies. Further, juvenile risk assessments intended to assess multiple domains that together predict recidivism risk were not designed to be used in JLS intervention outcomes research. Juvenile risk assessments also rely

heavily on user judgment and do not include youth and collateral perspectives (e.g., family members). As such, a shift towards more standardized and comprehensive assessment of these multiple domains in a youth's life as part of understanding intervention outcomes is needed.

To promote the shift towards more proximal measures of intervention effects in JLS-focused research, the present article proposes using a classical developmental framework (i.e., ecological systems theory) to inform the selection of variables beyond recidivism. First, we provide an overview of Bronfenbrenner's (1979) ecological systems theory and its application to the JLS. We next discuss how to use this model to select which variables might be considered intervention mediators, moderators, and outcomes. Importantly, we also include practical examples of pertinent constructs and measures regarding individual youth characteristics and elements of a youth's social ecology. To conclude, we discuss areas for future work and possible challenges to implementation.

1.1. Ecological systems theory and the juvenile legal system

Bronfenbrenner's (1979) ecological systems theory posits that youth behavior and well-being is influenced by the social systems in which youth find themselves embedded. These social systems interact with one another as well as the youth through interconnected subsystems. At the microsystem level, youth are directly impacted by their immediate social environment, such as family, peers, and teachers. The mesosystem is then comprised of interactions between these various subsystems (e.g., contact between parents and teachers), as well as with subsystems at other levels. The next level, the exosystem, is composed of individuals and contexts that are one step removed (e.g., neighbors, extended family, government organizations, the JLS), including those (e.g., caregivers' workplace) with which youths' family members interact. At the macrosystem level, broader constructs, such as widely held cultural beliefs and laws are included. The chronosystem is the level most distal to the youth and consists of the broader sociohistorical context as well as changes over time. Bronfenbrenner also stressed that there was a complex interplay between all levels, which also reciprocally interacts with the youth. Moreover, ecological systems theory also focuses on the role that facets of a youth's social ecology can play as both risk factors for and protective factors against the development of psychosocial concerns.

Much of the research on juvenile delinquency has been grounded in ecological systems theory, with several longitudinal cohort studies focusing on the link between youth risk and protective factors across several ecological levels and subsequent delinquent behavior and arrests. For example, in the *Pittsburgh Youth Study*, factors across the individual (e.g., impulsivity, ADHD symptoms, dealing drugs), family (e.g., poor parental supervision, use of physical punishment, lower levels of positive parenting), peer (e.g., exposure to deviant peers), and other more distal-levels (e.g., socioeconomic deprivation, living in a disadvantaged neighborhood) predicted delinquency (see Loeber et al., 1998 for a review). Similarly, findings from the *Pathways to Desistance Study* indicated that, among youth with serious arrest histories, neighborhood social organization was indirectly linked to delinquent behaviors through parenting practices and association with deviant peers (Chung and Steinberg, 2006). These studies

represent just a handful of longitudinal, ecologically focused studies on JLS-involved youth and underscore the importance of assessing for multiple social ecological factors in understanding their relationship with outcomes for JLS-involved youth.

Despite the ecological systems focus of the literature on the development and persistence of delinquent behavior, intervention studies focused on JLS-involved youth inconsistently report on outcomes beyond recidivism (Schwalbe et al., 2012; Olsson et al., 2021). However, several studies of family- and community-based treatments for JLS-involved youth have reported microsystem-level outcomes, including parenting behaviors (Eddy and Chamberlain, 2000; Letourneau et al., 2009; Humayun et al., 2017), caregiver mental health (Borduin et al., 1995), global family functioning (Borduin et al., 1995, 2009), involvement with deviant peers (Eddy and Chamberlain, 2000), prosocial peer relations (Borduin et al., 2009), academic performance (Borduin et al., 2009), and school attendance (Leve and Chamberlain, 2007). Across these studies, race, gender, and socioeconomic status are often evaluated as potential moderators of treatment effects; however, more in-depth, nuanced measures of distal social-ecological factors (e.g., neighborhood deprivation) are rarely assessed as moderators. It is evident that multi-level indices can be collected as part of JLS intervention outcome research, but the collection of such data is not currently standard practice.

Viewed together, there is ample longitudinal work suggesting that social-ecological variables are linked with entry into the JLS, as well as continued system involvement. On the other hand, intervention studies appear to often neglect these facets of youths' social ecologies when assessing for intervention effects. Thus, intervention studies often fail to inform us as to which risk and protective factors are addressed within the intervention. To bridge this gap, we recommend that investigators consider the ecological systems theory to inform the selection of intervention outcome variables.

1.2. Ecological systems theory as a framework for outcome selection

To put ecological systems theory into practice, researchers will need to apply a social ecological lens in selecting mediators, moderators, and outcomes pertinent to their intervention. To that end, there are several steps we recommend researchers take to guide their selection process. As an initial step, researchers should identify at which social-ecological level(s) their intervention occurs. For example, youth motivational interviewing interventions occur at the individual-youth level, family therapies occur primarily at the microsystem-level, and interventions seeking to change the JLS (e.g., juvenile drug courts) target the exosystem. In addition, some interventions such as multisystemic therapy target multiple levels of a youth's social ecology. After establishing the social-ecological level(s) of the intervention, researchers should choose potential mediators that occur at the intervention level (e.g., assessing cognitive distortions for an individual youth cognitive behavioral intervention) and that are consistent with the intervention's theory of change. Next, researchers should assess for *proximal* effects of their intervention ranging from variables at the intervention level down to facets of individual youth functioning (e.g., mental health). Given the focus that Bronfenbrenner's (1979) model places on the interaction between various subsystems, we also propose that researchers include

indices of more *distal* intervention effects through assessment at the next most proximal level beyond the one(s) at which the intervention is targeted (e.g., assessing variables at the mesosystem-level in a study of a family-based treatment). Finally, to select moderators, researchers should also assess for variables occurring at the other remaining distal social-ecological levels to gather information about the social-ecological contexts in which intervention effects occur. Moderators may also be selected from levels more proximal to the individual to inform tailoring of interventions to individual youth and families (e.g., age, race, gender, experiences of trauma and adverse events).

It is not practical for researchers to measure every possible facet of a youth's social ecology in an intervention outcome study, largely due to sample size considerations and participant measurement burden. Some of the most distal, moderating influences on intervention effects (e.g., state-level JLS policies) may be best understood through meta-analyses rather than a single outcome study—especially in cases of single site studies. Therefore, when weighing which outcomes, moderators, and mediators to assess for in such an outcome study, researchers must be selective in identifying facets of a youth's social ecology that could both be reasonably measured and affected by the intervention. Moreover, the selection of these indices should be explicitly guided by the broader developmental literature on the link between social-ecological domains and youth behavior. For example, it seems reasonable to suggest that interventions focused on reducing aggressive behaviors may also improve peer relations at the microsystem-level, given prior work linking aggression with peer rejection in adolescence (Beeson et al., 2020).

Multisystemic therapy (MST; Henggeler et al., 2009b), provides a concrete application of this framework to JLS intervention outcome research in the body of work on social-ecological outcomes, mediators, and moderators. MST is a family- and community-based intervention in which interventions take place primarily within multiple domains in the youth's microsystem (i.e., family, peers, school) and may also involve interventions at broader social-ecological levels (e.g., through targeting caregiver-school communication). Much of the evaluation research on MST has focused on youth recidivism and psychosocial functioning, as well as outcomes at the microsystem level (e.g., improved family functioning, reduced engagement with deviant peers; see Henggeler, 2011 for a review), with a handful of studies assessing for mesosystem-level variables (e.g., sibling and caregiver criminal involvement; Wagner et al., 2014; Johnides et al., 2017). Regarding mediators, a study found by Henggeler et al. (2009a) found that MST demonstrated favorable effects on antisocial behavior through reductions in deviant peer associations and improvements in caregiver discipline. Other work has established that improvements in family functioning mediate the link between MST and effects on long-term caregiver criminal involvement (Johnides et al., 2017), indicating that microsystem-level changes can impact the mesosystem for JLS-involved youth. Another study assessed for the moderating effect of neighborhood disadvantage on MST treatment effects and found that improvements in parental monitoring were linked with decreased problem behaviors only for youth and families residing in better neighborhoods (Robinson et al., 2015). This work highlights how facets of the exosystem can attenuate the effect that intervention-related changes in the microsystem may have on youth functioning. In sum, MST outcome research demonstrates that assessment across

multiple ecological domains allows for a richer, nuanced understanding of intervention effects.

1.3. Overview of social-ecological constructs

Applying ecological systems theory to measuring intervention outcomes within the JLS poses a challenge for researchers in terms of selecting measures and constructs pertinent to their study. Thus, we provide examples of ecological systems-related constructs relevant to healthy development among youth in the JLS. In addition, we provide sample measures of each construct in Tables 1–6, with a focus on measures with validity for either youth within the JLS or adolescents in general. Across various social-ecological levels, we recommend leveraging a multimethod, multi-reporter assessment battery, consisting of youth report, caregiver report, reports from other relevant sources (e.g., teachers, juvenile justice personnel), and administrative and collateral records. Below, we discuss several constructs across social-ecological levels that researchers could consider assessing in intervention outcome studies.

Although there are numerous individual-level constructs pertaining to youth development and well-being, we select examples that we believe are especially relevant to youth in the JLS (see Table 1). For example, rates of mental health and substance use disorders are high among JLS youth, and problems often persist into adulthood (Teplin et al., 2002, 2021). Thus, assessing for these concerns should be considered by JLS researchers. In selecting indices of mental health, researchers can choose between more general indices (e.g., *The Mental Health Inventory*; Berwick et al., 1991) or more disorder or concern-specific indices (e.g., the *Self Injurious Thoughts and Behaviors Questionnaire*; Nock et al., 2007). To assess for substance use, there are measures which pertain to frequency of use (e.g., the *Brief Screener for Tobacco, Alcohol, and Other Drugs*; Kelly et al., 2014) or consequences of use (e.g., the *CRAFFT*; Knight et al., 1999). The latter may be particularly pertinent given work by Holloway et al. (2022) indicating that drug use consequences, rather than frequency, are related to recidivism for youth with early JLS involvement. Table 1 includes additional individual-level constructs and measures.

Measures at the microsystem level should involve assessments of a youth's interactions with various subsystems (e.g., family, peers, school), as well as characteristics of those subsystems themselves (see Table 2 for measures). Within the family subsystem, there are several variables that may be especially important to consider. Prior work has established that several domains of parenting are linked with entry into the JLS, with findings from one meta-analysis suggesting that parental monitoring, control, and hostility are most strongly linked with delinquent behaviors (Hoeve et al., 2009). As an example, Frick's (1991) *Alabama Parenting Questionnaire* is validated with youth in the JLS and has several subscales relevant to supportive and aversive parenting (i.e., positive parenting, caregiver involvement, monitoring/supervision, inconsistent discipline, and corporal punishment).

Traumatic events and other adverse experiences can also occur within a youth's family and household at the microsystem-level. For example, adverse childhood experiences (ACEs; i.e., experiences of abuse and neglect, household dysfunction) may be important to consider in light of work linking ACEs with recidivism among youth in the JLS (Wolff and Baglivio, 2017; Craig et al., 2020) and behavioral

health in general among youth (Ballard et al., 2015). Given that youth in the JLS may have already accumulated several ACEs prior to study involvement, it could be the case that ACEs may be more well-suited as a moderator of intervention effects. If that were the case, then more in-depth measures of trauma exposure would be warranted. For example, the *Child PTSD Symptom Scale for DSM-5* (Foa et al., 2018) assess for both individual-level youth symptoms as well as exposure to interpersonal traumatic experiences. ACEs could also be evaluated more thoroughly through honing in on existing measures of relevant constructs. For example, living with a caregiver with a mental health disorder is characterized as an adverse experience. Thus, caregiver psychiatric diagnoses or global mental health (e.g., the *Brief Symptom Inventory*; Derogatis, 1975a) may also be important to assess, especially in light of caregivers of JLS-involved youth endorsing high levels of parenting stress and mental health concerns (Brown et al., 2018).

Peer relations and teacher influences are also important domains to consider assessing within a youth's microsystem. Given the link between peer affiliation and entry into the juvenile and adult legal systems (Gatti et al., 2009), intervention researchers may consider assessing for both deviant peer associations (the *Esbensen Gang Involvement Survey*; Esbensen et al., 2001) or engagement with prosocial peers (e.g., the *Peer Relations and Pro-Social Behavior Questionnaire*; Rigby and Slee, 1992). Finally, because JLS-involved youth face many academic challenges (Brown et al., 2008), school records (e.g., grade and attendance records), and youth self-report of school engagement (the *School Engagement Scale*; Fredricks et al., 2005) may allow for an enriched understanding of this subsystem.

The mesosystem consists of interactions between various subsystems in a youth's life, including between the family subsystem and other subsystems (see Table 3). For example, a recent study of Latinx JLS-involved youth reported that higher levels of caregiver school contact was linked with greater externalizing concerns; whereas, higher levels of positive caregiver school engagement was negatively associated with externalizing behaviors (Hoskins et al., 2021). This work highlights the need to for investigators to assess for caregiver-school relations in intervention studies. Thus, assessing facets of this relationship with caregiver and teacher-report measures such as the *Parent-Teacher Involvement Questionnaire* (Corrigan, 2002) may be useful. Assessing caregivers' contact with members of the JLS could also be relevant, given work indicating that the quality of this relationship may be linked with youths' success in complying with the terms of their probation (Vidal and Woolard, 2016). Caregiver's own criminal legal system involvement should also be considered, with caregivers' own engagement in illegal behavior posing as a well-studied risk factor for youth system involvement (see Besemer et al., 2017 for a review).

Several subsystems at the exosystem level (e.g., the legal system, caregivers' workplaces, neighborhoods, communities) may be pertinent to JLS interventions, especially those which occur at a broader social-ecological level (see Table 4). First, given that youth in the JLS are inherently making contact with the legal system, their interactions with the system could be assessed. For example, there are measures of police-youth relations, including youth attitudes towards police (Fine et al., 2003) and police attitudes towards youth (Rabois and Haaga, 2002). Pertaining to neighborhoods and communities, the Expanded ACEs framework also would suggest that evaluation of household-level traumatic and adverse experiences

TABLE 1 Measures of individual level constructs.

Measure name	Construct	# of items	Source	Method	Available languages	Access to measure
<i>Mental health</i>						
Child PTSD Symptom Scale for DSM-5 (CPSS-5; Foa et al., 2018)	Posttraumatic stress disorder diagnosis and symptom severity	27	Y	Self-Report, Interview	English; Spanish; Other languages	Online (Free) CPSS
Child and Adolescent Trauma Screen (CATS; Sachser et al., 2017)	Posttraumatic stress disorder diagnosis and symptom severity	20	Y; C	Self-Report; Interview, Caregiver Report	English, Spanish, Other languages	Online (Free) CATS
Kessler Psychological Distress Scale (K-6; Kessler et al., 2003)	Psychological distress	6	Y	Self-Report	English, Spanish, Other languages	Online (Free) Kessler6
The Mental Health Inventory (MHI-5; Berwick et al., 1991)	General psychological distress and well-being	18 (5)	Y	Self-Report	English, Spanish	Online (Free) MHI5
Suicidal Ideation Questionnaire – Junior (SIQ-JR; Reynolds, 1987)	Frequency of suicide ideation	15	Y	Self-Report	English	Online (Free) SIQ-JR
Self-Injurious Thoughts and Behaviors – Short Form (SITBI-SF; Nock et al., 2007)	Presence, frequency, and characteristics of self-injurious thoughts and behaviors	169 (72)	Y	Interview, Self-Report	English	Online (Free) SITBI-SF
<i>Substance use</i>						
AIDS Risk Behavior Assessment (ARBA; Donenberg et al., 2001)	Sexual behavior, drug/alcohol use, and needle use	32	Y	Interview	English	Online (Free) ARBA
The CRAFT 2.1 (Knight et al., 1999)	Substance-related risks and problems	9	Y	Interview, Self-Report	English, Spanish, Other languages	Online (Free) CRAFT
Risk Assessment Battery (RAB; Metzger et al., 1993)	Drug use practices and sexual behaviors	45	Y	Self-Report	English	Online (Free) RAB
Screening to Brief Intervention (S2BI; Levy et al., 2014)	For severity of substance use	7	Y	Self-Report	English	Online (Free) S2BI
Brief Screener for Tobacco, Alcohol, and other Drugs (BSTAD; Kelly et al., 2014)	Risky substance use and frequency of use	6–36	Y	Self-Report; Health Professional	English	Online (Free) BSTAD
<i>Life satisfaction</i>						
Satisfaction with Life Scale (SWLS; Diener et al., 1985)	Satisfaction with one's life	5	Y	Self-Report	English, Spanish, Other languages	Online (Free) SWLS
Multidimensional Students' Life Satisfaction Scale (MSLSS; Huebner, 1994)	Youths' satisfaction across life domains	40	Y	Self-Report	English, Spanish, and Other languages	Online (Free) MSLSS
Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS; Seligson et al., 2003)	Youths' life satisfaction in specific domains	6	Y	Self-Report	English	Online (Free) BMSLSS

(Continued)

TABLE 1 (Continued)

Measure name	Construct	# of items	Source	Method	Available languages	Access to measure
Students' Life Satisfaction Scale (SLSS; Huebner, 1991)	Global life satisfaction	7	Y	Self-Report	English	Online (Free) SLSS
<i>Risk behavior</i>						
2023 Middle School Youth Risk Behavior Survey Questionnaire (YRBSQ; Center for Disease Control and Prevention, 2022b)	Health behaviors	15	Y	Self-Report	Spanish, English	Online (Free) YRBSQ
2023 High School Youth Risk Behavior Survey Questionnaire (YRBSQ; Center for Disease Control and Prevention, 2022a)	Health behaviors	24	Y	Self-Report	Spanish, English	Online (Free) YRBSQ
Risk Assessment Battery (RAB; Metzger et al., 1993)	Drug use practices and sexual behaviors	45	Y	Self-Report	English	Online (Free) RAB
<i>Physical health</i>						
Children Health Questionnaire (CHQ; Landgraf et al., 1996)	Youth health-related quality of life	87 (45)	Y; C	Self-Report	English and Other languages	Online (Free) CHQ
Children's Global Assessment Scale (CGAS; Shaffer et al., 1983).	General Functioning	1	C	Interview	English, Spanish, Swedish	Online (Free) CGAS
<i>Acculturation</i>						
Acculturation Scale (Marin et al., 1987).	Acculturation for Hispanics	12	Y	Self-Report	English & Spanish	Online (Free) Acculturation Scale.pdf
Vancouver Index of Acculturation (Ryder et al., 2000)	Migrants' orientations toward cultural and mainstream traditions	20	Y	Self-Report	English	Online (Free) Vancouver Index of Acculturation
Multidimensional Inventory of Black Identity (MIBI; Sellers et al., 1997)	Dimensions of Black identity and ideology	56	Y	Self-Report	English	Online (Free) MIBI
Native American Acculturation Scale (NAAS; Garrett and Pichette, 2000).	Level of involvement with Native American culture	20	Y	Self-Report	English	Online (Free) NAAS
<i>Prosocial behaviors</i>						
Weinberger Adjustment Inventory (Weinberger and Schwartz, 1990)	General social-emotional adjustment	7	45	Self-Report	English	Online (Free) Weinberger Adjustment Inventory
Strength and Difficulties Questionnaire (Goodman, 2001)	Behavioral and emotional difficulties	38	Y; C; T	Self-Report	English, Spanish, and Other Languages	Online (Free) SDQ

Y = youth; C = caregiver; T = teacher. Number in parenthesis indicate # of items on short form.

TABLE 2 Measures of microsystem level constructs.

Measure name	Construct	# of items	Source	Method	Available languages	Access to measure
<i>Family functioning</i>						
McMaster Family Assessment Device (Epstein et al., 1983)	General Family Functioning	12	Y; C	Self-Report	English	Online (Free) McMaster Family Assessment
Parent-Adolescent General Communication Scale (PAC; Barnes and Olson, 1985)	Parent-child communication	25	Y; C	Self-Report	English	Online (Free) PAC
<i>Parenting</i>						
Alabama Parenting Questionnaire (APQ; Frick, 1991)	Parenting practices	42	C	Self-Report	English	Online (Free) Copies of any publications using the APQ should be sent pfriick@uno.edu APQ
<i>Parental monitoring</i>						
Quality of Parental Relationships Inventory (Conger et al., 1994)	Quality of parental-adolescent relationships	42	Y	Self-Report	English	Online (Free) Quality of Parental Relationships Inventory
The Parental Monitoring Inventory (PMI; Steinberg et al., 1992)	Parental supervision strategies	9	Y	Self-Report	English	Online (Free) PMI
Parental Monitoring (P-Monitor; Stattin and Kerr, 2000)	Parental surveillance and knowledge of youths' behavior outside the home	24	Y	Self-Report	English	Online (Free) P-Monitor
<i>Parental mental health</i>						
The Symptom Checklist (SCL-90; Derogatis, 1975b)	Psychological problems	90	Y; C	Self-Report	English, Spanish, and Other Languages	Online (Free) SCL-90
Psychiatric Diagnosis	N/A	Y/N	C	N/A	N/A	N/A
Brief Symptom Inventory (BSI; Derogatis, 1975a)	Psychological symptoms and distress	53	Y; C	Self-Report	English	Online (Free) BSI
<i>Exposure to Household Dysfunction, Adverse Events, and Trauma</i>						
Divorce	N/A	N/A	Y; C	Self-Report	N/A	N/A
Remarriage	N/A	N/A	Y; C	Self-Report	N/A	N/A
Death of a parent	N/A	N/A	Y; C	Self-Report	N/A	N/A
Transition from mother to father households	N/A	N/A	Y; C	Self-Report	N/A	N/A
One-parent family to a two-parent family (with a stepparent)	N/A	N/A	Y; C	Self-Report	N/A	N/A

(Continued)

TABLE 2 (Continued)

Measure name	Construct	# of items	Source	Method	Available languages	Access to measure
Departure and reappearance of a parent or guardian	N/A	N/A	Y; C	Self-Report	N/A	N/A
Kinship (living with relative)	N/A	N/A	Y; C	Self-Report	N/A	N/A
Number of foster placements	N/A	N/A	Y; C	Self-Report	N/A	N/A
Adverse Childhood Experiences (ACES; Felitti et al., 1998)	Youth exposure to household dysfunction and child abuse/neglect	10	Y; C	Self-Report	English	Online (Free)
<i>Peer relations</i>						
Peer Conflict Scale (PCS; Marsee et al., 2011).	Dimensions of aggression	40	Y; C; T	Self-Report	English	Online (Free) PCS
The Peer Relations and Pro-Social Behavior Questionnaire (PSBQ; Rigby and Slee, 1992)	Bullying and anti-social behavior	20	Y; C; T	Self-Report	English	Online (Free) PSBQ
<i>Friendship</i>						
The Friendship Qualities Scale (FQS; Bukowski et al., 1994)	Quality of adolescents' relationships with close friends	23	Y	Self-Report	English	Online (Free) FQS
The Quality of Relationships Inventory (Pierce, 1991)	Quality of relationships with close friends	25	Y	Self-Report	English	Online (Free) The Quality of Relationships Inventory
<i>Mentorship</i>						
Mentorship (Kelley and Lee, 2018)	Characteristics of the mentee-mentor relationship	6	Y	Interview	English	Online (Free) Mentorship
Mentor-Youth Alliance Scale (Zand et al., 2009)	Perceptions of youths' relationship with a mentor	10	Y	Self-Report	English	Online (Free) Mentor Youth Alliance Scale
Mentor-Youth Relationships (Jucovy, 2002)	Quality of mentor-youth relationship	20	Y	Self-Report	English	Online (Free) Mentor Youth Relationships
<i>Microaggressions</i>						
The Racial and Ethnic Microaggressions Scale Youth Version (REMS-YV; Nadal, 2011)	Youths' experiences of racial and ethnic microaggressions		Y	Self-Report	English	Online (Free) REMS-YV
<i>Gang membership/involvement</i>						
Esbensen Gang Involvement Survey (EGI; Esbensen et al., 2001)	Level of gang involvement	6	Y	Self-Report	English	Online (Free) EGI
Eurogang Youth Survey (Weerman et al., 2009)	Gang membership	21	Y	Self-Report	English, Spanish, and Other Languages	Online (Free) Eurogang Youth Survey

(Continued)

TABLE 2 (Continued)

Measure name	Construct	# of items	Source	Method	Available languages	Access to measure
<i>Academic achievement</i>						
Grades	N/A	N/A	Y; C; T	Self-Report; Transcripts	N/A	N/A
Grade Point Average (GPA)	N/A	N/A	Y; C; T	Self-Report; Transcripts	N/A	N/A
State test scores	N/A	N/A	Y; C; T	Self-Report; Records	N/A	N/A
High school Completion	N/A	N/A	Y; C	Self-Report	N/A	N/A
Enrollment in higher education credits	N/A	N/A	Y; C	Self-Report	N/A	N/A
Credits earned	N/A	N/A	Y; C; T	Self-Report; Records	N/A	N/A
<i>School engagement</i>						
School Engagement Scale (SES; Fredricks et al., 2005)	Cognitive, emotional, and behavioral aspects of school engagement	15	Y	Self-Report	English, Spanish	Online (Free) SES
School is the Path Measure (Nurra and Oyserman, 2018)	Extent to which students perceive school as a pathway to success	5	Y	Self-Report	English & French	Online (Free) School is the Path
Harter's Self Perception Profile for Children (Harter, 1985)	General self-worth and academic competence	36	Y	Self-Report	English	Online (Free) Harter's Self Perception Profile
School attendance	N/A	N/A	Y; C; T	Self-Report Administrative Report	N/A	N/A

Y = youth; C = caregiver; T = teacher. Number in parenthesis indicate # of items on short form.

TABLE 3 Measures of mesosystem level constructs.

Measure name	Construct	# of items	Source	Method	Available languages	Access to measure
<i>Caregiver social support</i>						
Multidimensional Perceived Support Scale (MPSS; Zimet et al., 1990).	Social support	12	C	Self-Report	English	Online (Free) MPSS
<i>Caregiver-teacher involvement</i>						
Parent-teacher involvement questionnaire (Corrigan, 2002).	Parent and teacher involvement	26	C; T	Self-Report	English	Online (Free) Parent-teacher Involvement Questionnaire
<i>Caregiver-legal system involvement</i>						
Contact with probation officer (Vidal and Woolard, 2016).	Frequency and length of interaction with probation officer		C	Self-Report	N/A	Online (Free) Contact with Probation Officer
Caregiver/probation officer relationship quality (Vidal and Woolard, 2016).	Quality of parent interaction with probation officer	11	C	Self-Report	N/A	Online (Free) Caregiver/Probation Officer Relationship Quality
<i>Parent court involvement</i>						
Number of arrests	N/A	N/A	N/A	Court Records	N/A	N/A
Child welfare petitions	N/A	N/A	N/A	Court Records	N/A	N/A

Y = youth; C = caregiver; T = teacher.

should be broadened to include adverse experiences at the community and neighborhood-levels (Cronholm et al., 2015). Evaluating these community and neighborhood adverse experiences seems particularly relevant to JLS-involved youth, given work suggesting that youth within the system are more likely than their peers to reside in disadvantaged neighborhoods with high rates of crime and violence exposure (Chauhan and Reppucci, 2009; Wolff et al., 2018). Thus, it would likely be beneficial for investigators to use in-depth indices of neighborhood qualities in their work (e.g., *Survey of Children’s Exposure to Community Violence*; Richters and Saltzman, 1990). Beyond neighborhood and community contexts, caregivers’ interactions with the employment system in the United States, as well as with workplaces (for those who are employed), are also thought by Bronfenbrenner (1979) to play an important role in shaping healthy youth development. As an example, over half of primary caregivers in a sample of youth making first contact with the system reported that they were not currently employed (Yonek et al., 2019). Such work indicates the importance of assessing employment barriers for caregivers of youth within the system.

Constructs at the macrosystem-level include cultural values, beliefs, and laws, as well as broader cultural influences (see Table 5 for measures). Given that racial, ethnic, and sexual and gender minoritized youth make disproportionate contact with the JLS (Hirschtritt et al., 2018; Jonnson et al., 2019; Puzanchera and Hockenberry, 2019; Puzanchera and Hockenberry, 2021), the influence that experiences of racism and heterosexism exert on intervention effects for JLS-involved youth seems important to

understand. More recently, researchers have begun looking at the effects of broader policy, laws, and broader cultural attitudes and beliefs on the efficacy of youth mental health interventions, which can inform intervention research within the JLS. In two studies, Price et al. (2021, 2022) accessed publicly available state-level data on explicit racial attitudes and cultural sexism to assess whether psychotherapies are less effective for youth residing in communities with higher levels of anti-Black racism and sexism, respectively. Findings from both studies indicated that psychotherapy was less effective for girls living in areas with higher levels of cultural sexism and for Black youth living in areas with higher levels of racism. Such innovative work suggests that researchers can leverage state- and community-level data on such cultural forces to determine its impact on intervention outcomes; however, in JLS outcome studies, this would require conducting the study at multiple sites. Thus, youth reports of their own experiences of discrimination and identity-based stress may also be important to document. For example, work by Martin et al. (2011) indicated that youth self-reported perceived discrimination, measured via the *Schedule of Racist Events* (Landrine and Klonoff, 1996), was directly linked with subsequent delinquency. Although less is known about experiences of discrimination and minority stress among sexual and gender minority youth within the JLS, studies indicate that experiences of minority stress among youth in the community are linked with behaviors which increase the risk of JLS involvement (e.g., substance use; Goldbach et al., 2014). Measures of discriminatory and traumatizing experiences related to youths’ identities could provide further contextual information for intervention efficacy and

TABLE 4 Measures of exosystem level constructs.

Measure name	Construct	# of items	Source	Method	Available languages	Access to measure
<i>Police youth engagement</i>						
Police Encounter Variable (Jackson et al., 2019)	Whether youth have ever been stopped by police	1	Y	Interview	English	Online (Free) Police Encounter Variable
Contextual Features of Stops (Jackson et al., 2019)	Context of youths' encounter with police	6	Y	Interview	English	Online (Free) Contextual Features of Stops
Officer Intrusiveness (Jackson et al., 2019)	Behavior of police officer during interaction	7	Y	Self-Report	English	Online (Free) Officer Intrusiveness
Measure of Procedural Justice (Lind et al., 1997)	Perceptions of police fairness and equality	19	Y	Self-Report	English	Online (Free) Measure of Procedural Justice
Police Attitudes Toward Youth (Rabois and Haaga, 2002; Center for Applied Research in Human Development, 2008)	Police officers opinions and attitudes toward youth	10	C	Self-Report	English	Online (Free) Police Attitudes Towards Youth
Youth Attitudes Toward Police (Webb and Marshall, 1995; Fine et al., 2003)	Youths' attitudes toward police officers	14	Y	Self-Report	English	Online (Free) Youth Attitudes Toward Police
<i>Exposure to violence</i>						
Conflict Tactics Scale-Parent/Child (CTS-P/C; Straus et al., 1998)	Physical and psychological maltreatment	3	Y; C	Self-Report	English	Online (Free) CTS-P/C
Survey of Children's Exposure to Community Violence (Richters and Saltzman, 1990)	Youth exposure to threats in their community	13	Y; C	Self-Report	English	Online (Free) Survey of Children's Exposure to Community Violence
Exposure to Violence (ETV; Selner-O'Hagan et al., 1998)	Youths' exposure to violence	18	Y	Self-Report	English	Online (Free) Exposure to Violence
Expanded ACEs Questionnaire (Cronholm et al., 2015)	Youth's exposure to community violence, crime, and discrimination	15	Y	Self-Report	English	Online (Free) Expanded ACEs
<i>Neighborhood conditions</i>						
Neighborhood Qualities Measure (NQM; Mujahid et al., 2007)	Neighborhood safety and social cohesion	15		Self-Report	English	Online (Free) NQM
Neighborhood Conditions Measure (Sampson and Raudenbush, 1999)	Physical characteristics of youths' neighborhood	21	Y	Self-Report	English	Online (Free) Neighborhood Conditions Scale
Neighborhood Safety (Winstanley et al., 2008)	Neighborhood disorganization	8	Y	Self-Report	English	Online (Free) Neighborhood Safety
<i>Caregiver workplace</i>						
The Perceived Employment Barriers Scale (PEBS; Hong et al., 2014)	Number and type of employment related barriers	20	C	Self-Report	English	Online (Free) PEBS

Y = youth; C = caregiver; T = teacher.

TABLE 5 Measures of macrosystem level constructs.

Measure name	Construct	# of items	Source	Method	Available languages	Access to measure
<i>Social status</i>						
MacArthur Scale of Subjective Social Status Youth Version (Goodman et al., 2001)	Youths' perception of their family and social status	2	Y	Self-Report	English	Online (Free) MacArthur Scale of Subjective Social Status
MacArthur Scale of Subjective Social Status Adult Version (Adler et al., 2000)	Adults perception of their social status compared to others	1	C	Self-Report	English	Online (Free) MacArthur Scale of Subjective Social Status Adult Version
<i>Discrimination distress</i>						
Adolescent Discrimination Distress Index (Fisher et al., 2000)	Youths' experiences of racial and ethnic discrimination	15	Y	Self-Report	English	Online (Free) Adolescent Discrimination Distress
<i>Economic stress</i>						
Current Economic Stress Scale: CESS (Shek, 2005)	Perceptions of economic stress	4	Y	Self-Report	English	Online (Free) CESS
<i>Racial trauma</i>						
Racial Trauma Scale (RTS; Williams et al., 2022)	Trauma symptoms arising from racial maltreatment	30	Y	Self-Report	English	Online (Free) RTS
UConn Racial/Ethnic Stress and Trauma Survey (UnRESTS; Williams et al., 2018)	Impact of racism-related experiences	48	Y	Interview	English, Spanish	Online (Free) UnRESTS
<i>Heterosexism</i>						
The Daily Heterosexist Experiences Questionnaire (DHEQ; Balsam et al., 2013)	Aspects of minority stress	50	A	Self-Report	English	Online (Free) DHEQ
The LGBT People of Color Microaggressions Scale (Balsam et al., 2011)	Impact of microaggressions related to racism and heterosexism	18	A	Self-Report	English	Online (Free) The LGBT People of Color Microaggressions Scale

Y = youth; A = adults.

complement existing approaches of using static, demographic variables as intervention moderators.

Although the chronosystem represents a challenge in measurement, given the broad, sweeping constructs nested at this level, there are still several indices that may be feasible to assess (see Table 6 for measures). For youth involved in the JLS, the legal context seems particularly important to assess. Although laws are placed within the macrosystem, generational shifts within the legal system may have an effect on those seeking to do long-term follow-ups of their work. In fact, the shifts in the focus of the JLS noted earlier in the paper may moderate effects of interventions over time, indicating the need for either new interventions or changes to old ones (for a review of the pendulum swings of the JLS, see Cavanagh et al., 2022). In sum,

although constructs at this level may present practical issues in assessment, there may be an important place for evaluating such constructs within longitudinal intervention outcome studies.

1.4. Future directions and implementation challenges

Our measurement framework is intended to serve as a springboard for an improved intervention science for JLS-involved youth, with the hope of guiding several lines of future inquiry. One such potential avenue would involve evaluations of adverse effects of interventions for youth in the JLS. Prior work has suggested that

TABLE 6 Measures of chronosystem level constructs.

Measure name	Construct	# of items	Source	Method	Available languages	Access to measure
<i>Life transitions</i>						
Transitional Impact Scale (TIS; Svob et al., 2014)	Life transitions	12	Y	Self-Report	English	Online (Free) TIS
<i>Intergenerational trauma</i>						
Adverse Childhood Experiences (ACES; Felitti et al., 1998)	Caregiver and Family adverse experiences	10	C	Self-Report	English	Online (Free) ACES
<i>Puberty</i>						
Pubertal Development Status Scale (PDS; Petersen et al., 1988)	Adolescent physical development	4	Y	Self-Report	English	Online (Free) PDS
Tanner Ratings (Tanner, 1962; Morris and Udry, 1980)	Onset and progress of puberty	5	Y; C	Self-Report	English	Online (Free) Tanner Ratings
<i>School transitions</i>						
Quality of Transition Instrument (Garner and Moots, 2018)	Student well-being after transitioning to a new school	24	Y	Self-Report	English	Online (Free) Quality of Transition Instrument

Y = youth; C = caregivers; T = teacher; A = adults.

bootcamps, often used to treat conduct problems in JLS-involved youth, actually worsen conduct problems (Lilienfeld, 2007). Further, Rubenson et al. (2021) established that having law enforcement officers facilitate gang-focused interventions may lead to adverse outcomes under some circumstances. However, there are few, if any, outcome studies which have reported on adverse effects on social-ecological domains outside of the primary intervention target. Identifying which interventions reduce recidivism but lead to deterioration in other outcome domains could help inform the selection of which interventions to use with particular youth.

In future work, researchers can also leverage longitudinal outcome studies to understand more complex pathways of intervention effects. Specifically, the present measurement framework would likely allow for the use of serial mediation models (Hayes, 2017) to be able to measure how changes in one social ecological domain may lead to subsequent changes in other domains, and then ultimately, changes in youth recidivism. To date, most mediation studies have focused on intervention effects from models using single independent, dependent, and mediator variables. However, Deković et al. (2012) found that MST led to increases in parental competence, which, in turn, led to improvements in positive parenting, resulting in a decrease in youth externalizing behaviors. Such work indicates that facets of the youth microsystem interact with one another to yield improvements in youth behavior. As stated earlier, recidivism is often the last domino to fall in a longer causal chain. By identifying how interventions affect those dominoes earlier in the chain, we can gain a better understanding of what constructs to target and when to target them.

In general, the proposed framework would offer a shift from the standard assessment protocol within the field and, as with the implementation of any new practice, would not be without its

tradeoffs. Researchers would likely have to contend with more practical issues, such as missing data and increased cost of paying participants to complete measures. Thus, our proposal represents a unique opportunity for researchers to engage in collaborations with agencies and organizations across youths' social ecologies to facilitate data collection. Schools, JLS agencies, community organizations, and national organizations all collect data at broader social-ecological levels that could be used in outcome studies. For example, researchers can work with Unite Us and other organizations that gather large-scale data on local social determinants of health (Butler, 2021). Collecting such data would reduce participant burden and also allow for researchers to include variables not previously assessed in intervention studies in their work. Through such collaborations, JLS researchers could seek to use shared measures and protocols across studies, similar to the PhenX Toolkit used by NIH investigators (Hendershot et al., 2015). Further, conducting multisite intervention studies with larger sample sizes would also allow for investigators to look at more nuanced intervention effects (e.g., the effect of neighborhood context on outcomes). In sum, novel collaboration efforts will be essential to the implementation of this framework.

There are also several challenges to implementing such a framework. First, although we have identified several relevant constructs across youths' social ecologies, there are likely indices that are not sensitive to change throughout treatment. Many of these constructs may not have been previously used in intervention studies. In fact, measures used across several intervention studies that fail to yield effects could be the result of an inability to detect change as opposed to a true lack of effect. Second, the extant literature for JLS-involved youth contains far more measures of risk factors than protective factors, which runs counter to both

ecological systems theory and risk models in the JLS. Thus, there is great need to develop and validate measures which are sensitive to change throughout treatment and focus on protective factors for JLS-involved youth.

The use of a standardized assessment protocol is essential to being able to evaluate outcomes across youth. Despite this, applying a broader social-ecological lens makes it apparent that a one-size-fits-all approach to measurement may miss important details. It could be the case that two youth participating in an intervention study both improve on the same measure of academic performance. However, one youth may improve due to increased school engagement at their school of origin, whereas another youth may improve due to moving to a better-fitting school. Such granular driving forces of intervention effects may be difficult to parse, given that researchers cannot be reasonably expected to measure every possible social-ecological variable. Further, typical sample sizes in JLS intervention research would not allow for such analyses. Ultimately, these nuances are missed by using a standard intervention protocol in intervention research.

2. Conclusion

Shifting towards more universal assessment and report of JLS intervention effects on facets of youths' social ecologies could lead to a more nuanced intervention science within the field. Researchers and those working within the JLS would be able to gain a better understanding of which social-ecological factors are able to be addressed by certain interventions. Further, collecting information regarding youth social environments is in line with JLS's current focus on implementing interventions that can dually reduce system involvement and improve youth well-being (Cavanagh et al., 2022). Assessing broader social-ecological factors could lead to advances in personalized interventions through providing information on the circumstances under which particular interventions work best (e.g., which jurisdictions are best suited to implement certain interventions based on local policy and resources). Taken together, ecological systems theory can help to improve intervention outcomes research within the JLS.

References

- Adler, N. E., Epel, E. S., Castellazzo, G., and Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: preliminary data in healthy, white women. *Health Psychol.* 19, 586–592. doi: 10.1037/0278-6133.19.6.586
- Ballard, E., Van Eck, K., Musci, R., Hart, S., Storr, C., Breslau, N., et al. (2015). Latent classes of childhood trauma exposure predict the development of behavioral health outcomes in adolescence and young adulthood. *Psychol. Med.* 45, 3305–3316. doi: 10.1017/S0033291715001300
- Balsam, K. F., Beadnell, B., and Molina, Y. (2013). The daily heterosexist experiences questionnaire: measuring minority stress among lesbian, gay, bisexual, and transgender adults. *Meas. Eval. Couns. Dev.* 46, 3–25. doi: 10.1177/0748175612449743
- Balsam, K. F., Molina, Y., Beadnell, B., Simoni, J., and Walters, K. (2011). Measuring multiple minority stress: the LGBT people of color microaggressions scale. *Cult. Divers. Ethn. Minor. Psychol.* 17, 163–174. doi: 10.1037/a0023244
- Barnes, H. L., and Olson, D. H. (1985). Parent-adolescent communication and the circumplex model. *Child Dev.* 56, 438–447. doi: 10.2307/1129732
- Beeson, C. M., Brittain, H., and Vaillancourt, T. (2020). The temporal precedence of peer rejection, rejection sensitivity, depression, and aggression across adolescence. *Child Psychiatry Hum. Dev.* 51, 781–791. doi: 10.1007/s10578-020-01008-2
- Berwick, D. M., Murphy, J. M., Goldman, P. A., Ware, J. E. Jr., Barsky, A. J., and Weinstein, M. C. (1991). Performance of a five-item mental health screening test. *Med. Care* 29, 169–176. doi: 10.1097/00005650-199102000-00008
- Besemer, S., Ahmad, S. I., Hinshaw, S. P., and Farrington, D. P. (2017). A systematic review and meta-analysis of the intergenerational transmission of criminal behavior. *Aggress. Violent Behav.* 37, 161–178. doi: 10.1016/j.avb.2017.10.004
- Blumstein, A., and Larson, R. C. (1971). Problems in modeling and measuring recidivism. *J. Res. Crime Delinq.* 8, 124–132. doi: 10.1177/002242787100800202
- Borduin, C. M., Mann, B. J., Cone, L. T., Henggeler, S. W., Fucci, B. R., Blaske, D. M., et al. (1995). Multisystemic treatment of serious juvenile offenders: long-term prevention of criminality and violence. *J. Consult. Clin. Psychol.* 63, 569–578. doi: 10.1037/0022-006X.63.4.569
- Borduin, C. M., Schaeffer, C. M., and Heiblum, N. (2009). A randomized clinical trial of multisystemic therapy with juvenile sexual offenders: effects on youth social ecology and criminal activity. *J. Consult. Clin. Psychol.* 77, 26–37. doi: 10.1037/a0013035
- Brogan, L., Haney-Caron, E., NeMoyer, A., and DeMatteo, D. (2015). Applying the risk-needs-responsivity (RNR) model to juvenile justice. *Crim. Justice Rev.* 40, 277–302. doi: 10.1177/0734016814567312
- Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Harvard University Press, Cambridge, MA.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

KS and RB contributed to the conceptualization, drafting, and editing of this manuscript. SH and KK contributed to the conceptualization, review of drafts, and editing of this manuscript. All authors contributed to the article and approved the submitted version.

Funding

Funding for this manuscript was supported by the National Institute of Mental Health (5T32MH078788; R01MH129770) and the American Psychological Association's Minority Fellowship Program.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

The reviewer CK declared a past collaboration with the author KK to the handling editor.

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- Brown, J. D., Riley, A. W., Walrath, C. M., Leaf, P. J., and Valdez, C. (2008). Academic achievement and school functioning among nonincarcerated youth involved with the juvenile justice system. *J. Educ. Stud. Placed Risk* 13, 59–75. doi: 10.1080/10824660701860409
- Brown, L. K., Tarantino, N., Tolou-Shams, M., Esposito-Smythers, C., Healy, M. G., and Craker, L. (2018). Mental health symptoms and parenting stress of parents of court-involved youth. *J. Child Fam. Stud.* 27, 843–852. doi: 10.1007/s10826-017-0923-1
- Bukowski, W. M., Hoza, B., and Boivin, M. (1994). Measuring friendship quality during pre- and early adolescence: the development and psychometric properties of the friendship qualities scale. *J. Soc. Pers. Relat.* 11, 471–484. doi: 10.1177/0265407594113011
- Butler, S. M. (2021). What is the outlook for addressing social determinants of health? *JAMA Health Forum* 2:e213639. doi: 10.1001/jamahealthforum.2021.3639
- Caudill, J. W., and Trulson, C. R. (2022). Comparing official measures of recidivism in juvenile justice. *Am. J. Crim. Justice* 48, 319–344. doi: 10.1007/s12103-022-09672-x
- Cavanagh, C., Paruk, J., and Grisso, T. (2022). The developmental reform in juvenile justice: its progress and vulnerability. *Psychol. Public Policy Law* 28, 151–166. doi: 10.1037/law0000326
- Center for Applied Research in Human Development (2008). Effective Police Interactions with Youth: Training Evaluation. Available at: https://www.ct.gov/opm/lib/opm/cjppd/cjjyd/jjydpublishations/police_eval_full_report_final_september_2008.pdf
- Center for Disease Control and Prevention (2022a). High school youth risk behavior surveillance. Available at: <https://www.cdc.gov/healthyouth/data/yrbs/questionnaires.htm>
- Center for Disease Control and Prevention (2022b). Youth risk behavior surveillance. Available at: <https://www.cdc.gov/healthyouth/data/yrbs/questionnaires.htm>
- Chauhan, P., and Reppucci, N. D. (2009). The impact of neighborhood disadvantage and exposure to violence on self-report of antisocial behavior among girls in the juvenile justice system. *J. Youth Adolesc.* 38, 401–416. doi: 10.1007/s10964-008-9326-3
- Chung, H. L., and Steinberg, L. (2006). Relations between neighborhood factors, parenting behaviors, peer deviance, and delinquency among serious juvenile offenders. *Dev. Psychol.* 42, 319–331. doi: 10.1037/0012-1649.42.2.319
- Conger, R. D., Ge, X., Elder, G. H., Lorenz, F. O., and Simons, R. L. (1994). Economic stress, coercive family process, and developmental problems of adolescents. *Child Dev.* 65, 541–561. doi: 10.2307/1131401
- Corrigan, A. (2002). Parent-teacher involvement questionnaire: Parent version (fast track project technical report). Available at: <http://www.fasttrackproject.org>
- Craig, J. M., Trulson, C. R., DeLisi, M., and Cuadill, J. W. (2020). Toward an understanding of the impact of adverse childhood experiences on the recidivism of serious juvenile offenders. *Am. J. Crim. Justice* 45, 1024–1039. doi: 10.1007/s12103-020-09524-6
- Cronholm, P. F., Forke, C. M., Wade, R., Bair-Merritt, M. H., Davis, M., Harkins-Schwarz, M., et al. (2015). Adverse childhood experiences: expanding the concept of adversity. *Am. J. Prev. Med.* 49, 354–361. doi: 10.1016/j.amepre.2015.02.001
- Deković, M., Asscher, J. J., Manders, W. A., Prins, P. J., and van der Laan, P. (2012). Within-intervention change: mediators of intervention effects during multisystemic therapy. *J. Consult. Clin. Psychol.* 80, 574–587. doi: 10.1037/a0028482
- Derogatis, L. R. (1975a). Brief symptom inventory. *Eur. J. Psychol. Assess.* doi: 10.1037/t00789-000
- Derogatis, L. R. (1975b). *SCL-90-R: Symptom Checklist-90-R: Administration, Scoring, and Procedures Manual*. NCS Pearson. Bloomington, MN
- Diener, E. D., Emmons, R. A., Larsen, R. J., and Griffin, S. (1985). The satisfaction with life scale. *J. Pers. Assess.* 49, 71–75. doi: 10.1207/s15327752jpa4901_13
- Donenberg, G. R., Emerson, E., Bryant, F. B., Wilson, H., and Weber-Shifrin, E. (2001). Understanding AIDS-risk behavior among adolescents in psychiatric care: links to psychopathology and peer relationships. *J. Am. Acad. Child Adolesc. Psychiatry* 40, 642–653. doi: 10.1097/00004583-200106000-00008
- Eddy, J. M., and Chamberlain, P. (2000). Family management and deviant peer association as mediators of the impact of treatment condition on youth antisocial behavior. *J. Consult. Clin. Psychol.* 68, 857–863. doi: 10.1037/0022-006X.68.5.857
- Elliott, D. S. (1995). *Lies, damn lies, and arrest statistics*. Boulder, CO: Center for the Study and Prevention of Violence.
- Epstein, N. B., Baldwin, L. M., and Bishop, D. S. (1983). The McMaster family assessment device. *J. Marital. Fam. Ther.* 9, 171–180. doi: 10.1111/j.1752-0606.1983.tb01497.x
- Esbensen, F. A., Winfree, L. T. Jr., He, N., and Taylor, T. J. (2001). Youth gangs and definitional issues: when is a gang a gang, and why does it matter? *Crime Delinq.* 47, 105–130. doi: 10.1177/001128701047001005
- Fazel, S., and Wolf, A. (2015). A systematic review of criminal recidivism rates worldwide: current difficulties and recommendations for best practice. *PLoS One* 10:e0130390. doi: 10.1371/journal.pone.0130390
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., et al. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the adverse childhood experiences (ACE) study. *Am. J. Prev. Med.* 14, 245–258. doi: 10.1016/S0749-3797(98)00017-8
- Fine, M., Freudenberg, N., Payne, Y., Perkins, T., Smith, K., and Wanzer, K. (2003). “Anything can happen with police around”: urban youth evaluate strategies of surveillance in public places. *J. Soc. Issues* 59, 141–158. doi: 10.1111/1540-4560.t01-1-00009
- Fisher, C. B., Wallace, S. A., and Fenton, R. E. (2000). Discrimination distress during adolescence. *J. Youth Adolesc.* 29, 679–695. doi: 10.1023/A:1026455906512
- Foa, E. B., Asnaani, A., Zang, Y., Capaldi, S., and Yeh, R. (2018). Psychometrics of the child PTSD symptom scale for DSM-5 for trauma-exposed children and adolescents. *J. Clin. Child Adolesc. Psychol.* 47, 38–46. doi: 10.1080/15374416.2017.1350962
- Folk, J. B., Brown, L. K., Marshall, B. D., Ramos, L., Gopalakrishnan, L., Koinis-Mitchell, D., et al. (2020). The prospective impact of family functioning and parenting practices on court-involved youth’s substance use and delinquent behavior. *J. Youth Adolesc.* 49, 238–251. doi: 10.1007/s10964-019-01099-8
- Fredricks, J. A., Blumenfeld, P., Friedel, J., and Paris, A. (2005). “School engagement” in *What Do Children Need to Flourish?* eds. K. A. Moore and L. H. Lippman (Boston, MA: Springer), 305–321.
- Frick, P. J. (1991). *The Alabama Parenting Questionnaire*. Tuscaloosa, AL: University of Alabama.
- Garner, J., and Moots, S. C. (2018). Measuring well-being as students transition between schools: the validation of the quality of transition instrument. *J. Risk Issues* 21, 1–12.
- Garrett, M. T., and Pichette, E. F. (2000). Red as an apple: native American acculturation and counseling with or without reservation. *J. Couns. Dev.* 78, 3–13. doi: 10.1002/j.1556-6676.2000.tb02554.x
- Gatti, U., Tremblay, R. E., and Vitaro, F. (2009). Iatrogenic effect of juvenile justice. *J. Child Psychol. Psychiatry* 50, 991–998. doi: 10.1111/j.1469-7610.2008.02057.x
- Goldbach, J. T., Tanner-Smith, E. E., Bagwell, M., and Dunlap, S. (2014). Minority stress and substance use in sexual minority adolescents: a meta-analysis. *Prev. Sci.* 15, 350–363. doi: 10.1007/s11121-013-0393-7
- Goodman, E., Adler, N. E., Kawachi, I., Frazier, A. L., Huang, B., and Colditz, G. A. (2001). Adolescents’ perceptions of social status: development and evaluation of a new indicator. *Pediatrics* 108:e31. doi: 10.1542/peds.108.2.e31
- Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *J. Am. Acad. Child Adolesc. Psychiatry* 40, 1337–1345. doi: 10.1097/00004583-200111000-00015
- Harris, P. W., Lockwood, B., Mengers, L., and Stoodley, B. (2011). *Measuring Recidivism in Juvenile Corrections*. Office of Juvenile Justice and Delinquency Prevention, Washington, DC
- Harter, S. (1985). Self-perception profile for children. *Hisp. J. Behav. Sci.* doi: 10.1037/t05338-000
- Hayes, A. F. (2017). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. Guilford Publications. New York City
- Henggeler, S. W. (2011). Efficacy studies to large-scale transport: the development and validation of multisystemic therapy programs. *Annu. Rev. Clin. Psychol.* 7, 351–381. doi: 10.1146/annurev-clinpsy-032210-104615
- Henggeler, S. W., Letourneau, E. J., Chapman, J. E., Borduin, C. M., Schewe, P. A., and McCart, M. R. (2009a). Mediators of change for multisystemic therapy with juvenile sexual offenders. *J. Consult. Clin. Psychol.* 77, 451–462. doi: 10.1037/a0013971
- Henggeler, S. W., Schoenwald, S. K., Borduin, C. M., Rowland, M. D., and Cunningham, P. B. (2009b). *Multisystemic Therapy for Antisocial Behavior in Children and Adolescents*. Guilford Press. New York City
- Hendershot, T., Pan, H., Haines, J., Harlan, W. R., Marazita, M. L., McCarty, C. A., et al. (2015). Using the Phen X toolkit to add standard measures to a study. *Curr. Protoc. Hum. Genet.* 86, 1–21. doi: 10.1002/0471142905.hg0121s86
- Hirschtritt, M. E., Dauria, E. F., Marshall, B. D., and Tolou-Shams, M. (2018). Sexual minority, justice-involved youth: a hidden population in need of integrated mental health, substance use, and sexual health services. *J. Adolesc. Health* 63, 421–428. doi: 10.1016/j.jadohealth.2018.05.020
- Hoeve, M., Dubas, J. S., Eichelsheim, V. I., Van der Laan, P. H., Smeenk, W., and Gerris, J. R. (2009). The relationship between parenting and delinquency: a meta-analysis. *J. Abnorm. Child Psychol.* 37, 749–775. doi: 10.1007/s10802-009-9310-8
- Holloway, E. D., Folk, J. B., Ordorica, C., and Tolou-Shams, M. (2022). Peer, substance use, and race-related factors associated with recidivism among first-time justice-involved youth. *Law Hum. Behav.* 46, 140–153. doi: 10.1037/lhb0000471
- Hong, P. Y. P., Polanin, J. R., Key, W., and Choi, S. (2014). Development of the perceived employment barrier scale (PEBS): measuring psychological self-sufficiency. *J. Community Psychol.* 42, 689–706. doi: 10.1002/jcop.21646
- Hoskins, D., Meza, J. I., Del Cid, M. V., Kemp, K., Koinis-Mitchell, D., Webb, M., et al. (2021). “Impact of family, neighborhood, and schools on behavioral health needs of justice-involved Latinx adolescents” in *Couple and Family Psychology: Research and Practice*. ed. M. D. Sherman (Washington, DC: American Psychological Association)
- Huebner, E. S. (1991). Further validation of the Students’ life satisfaction scale: the independence of satisfaction and affect ratings. *J. Psychoeduc. Assess.* 9, 363–368. doi: 10.1177/073428299100900408

- Huebner, E. S. (1994). Preliminary development and validation of a multidimensional life satisfaction scale for children. *Psychol. Assess.* 6, 149–158. doi: 10.1037/1040-3590.6.2.149
- Humayun, S., Herlitz, L., Chesnokov, M., Doolan, M., Landau, S., Scott, S., et al. (2017). Randomized controlled trial of Functional Family Therapy for offending and antisocial behavior in UK youth. *J. Child Psychol. Psychiatry.* 58, 1023–1032. doi: 10.1111/jcpp.12743
- Jackson, D. B., Fahmy, C., Vaughn, M. G., and Testa, A. (2019). Police stops among at-risk youth: repercussions for mental health. *J. Adolesc. Health* 65, 627–632. doi: 10.1016/j.jadohealth.2019.05.027
- Johnides, B. D., Borduin, C. M., Wagner, D. V., and Dopp, A. R. (2017). Effects of multisystemic therapy on caregivers of serious juvenile offenders: a 20-year follow-up to a randomized clinical trial. *J. Consult. Clin. Psychol.* 85, 323–334. doi: 10.1037/ccp000199
- Jonsson, M. R., Bird, B. M., Li, S. M., and Viljoen, J. L. (2019). The prevalence of sexual and gender minority youth in the justice system: a systematic review and meta-analysis. *Crim. Justice Behav.* 46, 999–1019. doi: 10.1177/0093854819848803
- Jucovy, L. (2002). *Measuring the quality of Mentor-youth relationships: A tool for mentoring programs* Washington, DC: Technical Assistance Packet.
- Kelley, M. S., and Lee, M. J. (2018). When natural mentors matter: unraveling the relationship with delinquency. *Child Youth Serv. Rev.* 91, 319–328. doi: 10.1016/j.chldyouth.2018.06.002
- Kelly, S. M., Gryczynski, J., Mitchell, S. G., Kirk, A., O'Grady, K. E., and Schwartz, R. P. (2014). Validity of brief screening instrument for adolescent tobacco, alcohol, and drug use. *Pediatrics* 133, 819–826. doi: 10.1542/peds.2013-2346
- Kemp, K., Yurasek, A. M., Poindexter, B., Webb, M., and Tolou-Shams, M. (2020). Suicide screening among youth at first court contact. *Arch. Suicide Res.* 26, 748–760. doi: 10.1080/13811118.2020.1833795
- Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C., Hiripi, E., et al. (2003). Screening for serious mental illness in the general population. *Arch. Gen. Psychiatry* 60, 184–189. doi: 10.1001/archpsyc.60.2.184
- Knight, J. R., Shrier, L. A., Bravender, T. D., Farrell, M., Vander Bilt, J., and Shaffer, H. J. (1999). A new brief screen for adolescent substance abuse. *Arch. Pediatr. Adolesc. Med.* 153, 591–596. doi: 10.1001/archpedi.153.6.591
- Landgraf, J. L., Abetz, L., and Ware, J. E. (1996). *The CHQ User's manual*. The Health Institute, New England Medical Center, Boston.
- Landrine, H., and Klonoff, E. A. (1996). The schedule of racist events: a measure of racial discrimination and a study of its negative physical and mental health consequences. *J. Black Psychol.* 22, 144–168. doi: 10.1177/00957984960222002
- Letourneau, E. J., Henggeler, S. W., Borduin, C. M., Schewe, P. A., McCart, M. R., Chapman, J. E., et al. (2009). Multisystemic therapy for juvenile sexual offenders: 1-year results from a randomized effectiveness trial. *J. Fam. Psychol.* 23, 89–102. doi: 10.1037/a0014352
- Leve, L. D., and Chamberlain, P. (2007). A randomized evaluation of multidimensional treatment Foster Care: effects on school attendance and homework completion in juvenile justice girls. *Res. Soc. Work. Pract.* 17, 657–663. doi: 10.1177/1049731506293971
- Levy, S., Weiss, R., Sherritt, L., Ziemnik, R., Spalding, A., Van Hook, S., et al. (2014). An electronic screen for triaging adolescent substance use by risk levels. *JAMA Pediatr.* 168, 822–828. doi: 10.1001/jamapediatrics.2014.774
- Lilienfeld, S. O. (2007). Psychological treatments that cause harm. *Perspect. Psychol. Sci.* 2, 53–70. doi: 10.1111/j.1745-6916.2007.00029.x
- Lind, E. A., Tyler, T. R., and Huo, Y. J. (1997). Procedural context and culture: variation in the antecedents of procedural justice judgments. *J. Pers. Soc. Psychol.* 73, 767–780. doi: 10.1037/0022-3514.73.4.767
- Loeber, R., Farrington, D. P., Stouthamer-Loeber, M., Moffitt, T. E., and Caspi, A. (1998). The development of male offending: Key findings from the first decade of the Pittsburgh youth study. *Stud. Criminol. Crime Prev.* 7, 141–171.
- Marin, G., Sabogal, F., Marin, B. V., Otero-Sabogal, R., and Perez-Stable, E. J. (1987). Development of a short acculturation scale for Hispanics. *Hisp. J. Behav. Sci.* 9, 183–205. doi: 10.1177/07399863870092005
- Marsee, M. A., Barry, C. T., Childs, K. K., Frick, P. J., Kimonis, E. R., Munoz, L. C., et al. (2011). Assessing the forms and functions of aggression using self-report: factor structure and invariance of the peer conflict scale in youths. *Psychol. Assess.* 23, 792–804. doi: 10.1037/a0023369
- Martin, M. J., McCarthy, B., Conger, R. D., Gibbons, F. X., Simons, R. L., Cutrona, C. E., et al. (2011). The enduring significance of racism: discrimination and delinquency among black American youth. *J. Res. Adolesc.* 21, 662–676. doi: 10.1111/j.1532-7795.2010.00699.x
- Metzger, D., Woody, G. E., Navaline, H., McLellan, A. T., Meyers, K., Boney, T., et al. (1993). "The risk assessment battery (RAB): validity and reliability" in *Sixth annual meeting of National Cooperative Vaccine Development Group for AIDS* (Philadelphia, PA: University of Pennsylvania, Center for Studies on Addition)
- Miller-Johnson, S., Coie, J. D., Maumary-Gremaud, A., Lochman, J., and Terry, R. (1999). Relationship between childhood peer rejection and aggression and adolescent delinquency severity and type among African American youth. *J. Emot. Behav. Disord.* 7, 137–146. doi: 10.1177/106342669900700302
- Morris, N. M., and Udry, J. R. (1980). Validation of a self-administered instrument to assess stage of adolescent development. *J. Youth Adolesc.* 9, 271–280. doi: 10.1007/BF02088471
- Mujahid, M. S., Diez Roux, A. V., Morenoff, J. D., and Raghunathan, T. (2007). Assessing the measurement properties of neighborhood scales: from psychometrics to econometrics. *Am. J. Epidemiol.* 165, 858–867. doi: 10.1093/aje/kwm040
- Nadal, K. L. (2011). The racial and ethnic microaggressions scale (REMS): construction, reliability, and validity. *J. Couns. Psychol.* 58, 470–480. doi: 10.1037/a0025193
- Nock, M. K., Holmberg, E. B., Photos, V. I., and Michel, B. D. (2007). Self-injurious thoughts and behaviors interview: development, reliability, and validity in an adolescent sample. *Psychol. Assess.* 19, 309–317. doi: 10.1037/1040-3590.19.3.309
- Nurra, C., and Oyserman, D. (2018). From future self to current action: an identity-based motivation perspective. *Self Identity* 17, 343–364. doi: 10.1080/15298868.2017.1375003
- Office of Juvenile Justice and Delinquency Prevention (2021). *Juvenile justice statistics*. Available at: <https://ojjdp.ojp.gov/publications/juvenile-arrests-2019.pdf>
- Office of Juvenile Justice and Delinquency Prevention. (2023) *OJJDP priorities*. Available at: <https://ojjdp.ojp.gov/about/ojjdp-priorities>
- Olsson, T. M., Långström, N., Skoog, T., Andréa Löfholm, C., Leander, L., Brolund, A., et al. (2021). Systematic review and meta-analysis of noninstitutional psychosocial interventions to prevent juvenile criminal recidivism. *J. Consult. Clin. Psychol.* 89, 514–527. doi: 10.1037/ccp0000652
- Padgaonkar, N. T., Baker, A. E., Dapretto, M., Galván, A., Frick, P. J., Steinberg, L., et al. (2021). Exploring disproportionate minority contact in the juvenile justice system over the year following first arrest. *J. Res. Adolesc.* 31, 317–334. doi: 10.1111/jora.12599
- Petersen, A. C., Crockett, L., Richards, M., and Boxer, A. (1988). A self-report measure of pubertal status: reliability, validity, and initial norms. *J. Youth Adolesc.* 17, 117–133. doi: 10.1007/BF01537962
- Pierce, G. R. (1991). "Quality of relationships inventory: assessing the interpersonal context of social support" in *Communication of Social Support*. eds. B. R. Burleson, T. L. Albrecht and I. G. Sarason (Thousand Oaks, CA: Sage Publications, Inc), 247–266.
- Price, M. A., McKetta, S., Weisz, J. R., Ford, J. V., Lattanner, M. R., Skov, H., et al. (2021). Cultural sexism moderates efficacy of psychotherapy: results from a spatial meta-analysis. *Clin. Psychol. Sci. Pract.* 28, 299–312. doi: 10.1037/cps0000031
- Price, M. A., Weisz, J. R., McKetta, S., Hollinsaid, N. L., Lattanner, M. R., Reid, A. E., et al. (2022). Meta-analysis: are psychotherapies less effective for black youth in communities with higher levels of anti-black racism? *J. Am. Acad. Child Adolesc. Psychiatry* 61, 754–763. doi: 10.1016/j.jaac.2021.07.808
- Puzzanchera, C., and Hockenberry, S. (2021). Characteristics of delinquency cases handled in juvenile court 2019. National Center for Juvenile Justice National Center for Juvenile Justice. Available at: https://www.ojjdp.gov/ojstatbb/snapshots/DataSnapshot_JCS2019.pdf
- Puzzanchera, C., and Hockenberry, S. (2019). *Trends and Characteristics of Youth in Residential Placement, 2017*. Office of Juvenile Justice and Delinquency, Washington, DC
- Rabois, D., and Haaga, D. A. F. (2002). Facilitating police-minority youth attitude change: the effects of cooperation within a competitive context and exposure to typical exemplars. *J. Community Psychol.* 30, 189–195. doi: 10.1002/jcop.10003
- Reynolds, W. M. (1987). *Suicidal Ideation Questionnaire (SIQ)*. Odessa, FL: Psychological Assessment Resources.
- Richters, J. E., and Saltzman, W. (1990). *Survey of Exposure to Community Violence: Self-Report Version*. American Psychological Association. Washington, DC
- Rigby, K., and Slee, P. T. (1992). Dimensions of interpersonal relations among Australian school children and implications for psychological well-being. *J. Soc. Psychol.* 133, 33–42. doi: 10.1080/00224545.1993.9712116
- Robinson, B. A., Winiarski, D. A., Brennan, P. A., Foster, S. L., Cunningham, P. B., and Whitmore, E. A. (2015). Social context, parental monitoring, and multisystemic therapy outcomes. *Psychotherapy* 52, 103–110. doi: 10.1037/a0037948
- Rubenson, M. P., Galbraith, K., Shin, O., Beam, C. R., and Huey, S. J. Jr. (2021). When helping hurts? Toward a nuanced interpretation of adverse effects in gang-focused interventions. *Clin. Psychol. Sci. Pract.* 28, 29–39. doi: 10.1111/cpsp.12321
- Ryder, A. G., Alden, L. E., and Paulhus, D. L. (2000). Is acculturation unidimensional or bidimensional? A head-to-head comparison in the prediction of personality, self-identity, and adjustment. *J. Pers. Soc. Psychol.* 79, 49–65. doi: 10.1037/0022-3514.79.1.49
- Sachser, C., Berliner, L., Holt, T., Jensen, T. K., Jungbluth, N., Risch, E., et al. (2017). International development and psychometric properties of the child and adolescent trauma screen (CATS). *J. Affect. Disord.* 210, 189–195. doi: 10.1016/j.jad.2016.12.040
- Sampson, R. J., and Raudenbush, S. W. (1999). Systematic social observation of public spaces: a new look at disorder in urban neighborhoods. *Am. J. Sociol.* 105, 603–651. doi: 10.1086/210356
- Schalwe, C. S., Gearing, R. E., MacKenzie, M. J., Brewer, K. B., and Ibrahim, R. (2012). A meta-analysis of experimental studies of diversion programs for juvenile offenders. *Clin. Psychol. Rev.* 32, 26–33. doi: 10.1016/j.cpr.2011.10.002
- Seligson, J. L., Huebner, E. S., and Valois, R. F. (2003). Preliminary validation of the brief multidimensional students' life satisfaction scale (BMSLSS). *Soc. Indic. Res.* 61, 121–145. doi: 10.1023/A:1021326822957
- Sellers, R. M., Rowley, S. A., Chavous, T. M., Shelton, J. N., and Smith, M. A. (1997). Multidimensional inventory of black identity: a preliminary investigation of reliability and construct validity. *J. Pers. Soc. Psychol.* 73, 805–815. doi: 10.1037/0022-3514.73.4.805

- Selner-O'Hagan, M. B., Kindlon, D. J., Buka, S. L., Raudenbush, S. W., and Earls, F. J. (1998). Assessing exposure to violence in urban youth. *J. Child Psychol. Psychiatry Allied Discip.* 39, 215–224. doi: 10.1111/1469-7610.00315
- Sentencing Project. (2010) State Recidivism Studies. Washington, DC: The Sentencing Project. Available at: http://sentencingproject.org/doc/publications/inc_StateRecidivismStudies2010.pdf
- Shaffer, D., Gould, M. S., Brasic, J., Ambrosini, P., Fisher, P., Bird, H., et al. (1983). A children's global assessment scale (CGAS). *Arch. Gen. Psychiatry* 40, 1228–1231. doi: 10.1001/archpsyc.1983.01790100074010
- Shek, D. T. L. (2005). Economic stress, emotional quality of life, and problem behavior in Chinese adolescents with and without economic disadvantage. *Soc. Indic. Res.* 71, 363–383. doi: 10.1007/s11205-004-8028-9
- Stattin, H., and Kerr, M. (2000). Parental monitoring: A reinterpretation. *Child Dev.* 71, 1072–1085. doi: 10.1111/1467-8624.00210
- Steinberg, L., Dornbusch, S., and Darling, N. (1992). Impact of parenting practices on adolescent achievement. Authoritative parenting, school involvement, and encouragement to succeed. *Child Dev.* 63, 1266–1281. doi: 10.2307/1131532
- Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., and Runyan, D. (1998). Identification of child maltreatment with the parent-child conflict tactics scales: development and psychometric data for a national sample of American parents. *Child Abuse Negl.* 22, 249–270. doi: 10.1016/S0145-2134(97)00174-9
- Svob, C., Brown, N. R., Reddon, J. R., Uzer, T., and Lee, P. J. (2014). The transitional impact scale: assessing the material and psychological impact of life transitions. *Behav. Res. Methods* 46, 448–455. doi: 10.3758/s13428-013-0378-2
- Tanner, J. M. (1962) *Growth at adolescence*. 2nd, Blackwell Scientific Publications, Oxford.
- Tapia, M., Alarid, L. F., and Clare, C. (2018). Parenting styles and juvenile delinquency: exploring gendered relationships. *Juv. Fam. Court. J.* 69, 21–36. doi: 10.1111/jfcj.12110
- Teplin, L. A., Abram, K. M., McClelland, G. M., Dulcan, M. K., and Mericle, A. A. (2002). Psychiatric disorders in youth in juvenile detention. *Arch. Gen. Psychiatry* 59, 1133–1143. doi: 10.1001/archpsyc.59.12.1133
- Teplin, L. A., Potthoff, L. M., Aaby, D. A., Welty, L. J., Dulcan, M. K., and Abram, K. M. (2021). Prevalence, comorbidity, and continuity of psychiatric disorders in a 15-year longitudinal study of youths involved in the juvenile justice system. *JAMA Pediatr.* 175, e205807. doi: 10.1001/jamapediatrics.2020.5807
- Tolou-Shams, M., Brown, L. K., Marshall, B. D., Dauria, E., Koinis-Mitchell, D., Kemp, K., et al. (2019). The behavioral health needs of first-time offending justice-involved youth: substance use, sexual risk, and mental health. *J. Child Adolesc. Subst. Abuse* 28, 291–303. doi: 10.1080/1067828X.2020.1774023
- Vidal, S., and Woolard, J. (2016). Parents' perceptions of juvenile probation: relationship and interaction with juvenile probation officers, parent strategies, and youth's compliance on probation. *Child Youth Serv. Rev.* 66, 1–8. doi: 10.1016/j.childyouth.2016.04.019
- Wagner, D. V., Borduin, C. M., Sawyer, A. M., and Dopp, A. R. (2014). Long-term prevention of criminality in siblings of serious and violent juvenile offenders: a 25-year follow-up to a randomized clinical trial of multisystemic therapy. *J. Consult. Clin. Psychol.* 82, 492–499. doi: 10.1037/a0035624
- Webb, V. J., and Marshall, C. E. (1995). The relative importance of race and ethnicity on citizen attitudes toward the police. *Am. J. Police* 14, 45–66. doi: 10.1108/07358549510102749
- Weerman, F. M., Maxson, C. L., Esbensen, F. A., Aldridge, J., Medina, J., and van Gemert, F. (2009). *Eurogang Program manual*. Available at: <https://www.umsl.edu/ccj/Eurogang/EurogangManual.pdf>
- Weinberger, D. A., and Schwartz, G. E. (1990). Distress and restraint as superordinate dimensions of self-reported adjustment: a typological perspective. *J. Pers.* 58, 381–417. doi: 10.1111/j.1467-6494.1990.tb00235.x
- Williams, M. T., Metzger, I. W., Leins, C., and DeLapp, C. (2018). Assessing racial trauma within a DSM-5 framework: the UConn racial/ethnic stress & trauma survey. *Pract. Innov.* 3, 242–260. doi: 10.1037/pri0000076
- Williams, M. T., Osman, M., Gallo, J., Pereira, D. P., Gran-Ruaz, S., Strauss, D., et al. (2022). A clinical scale for the assessment of racial trauma. *Pract. Innov.* 7, 223–240. doi: 10.1037/pri0000178
- Winstanley, E. L., Steinwachs, D. M., Ensminger, M. E., Latkin, C. A., Stitzer, M. L., and Olsen, Y. (2008). The association of self-reported neighborhood disorganization and social capital with adolescent alcohol and drug use, dependence, and access to treatment. *Drug Alcohol Depend.* 92, 173–182. doi: 10.1016/j.drugalcdep.2007.07.012
- Wolff, K. T., and Baglivio, M. T. (2017). Adverse childhood experiences, negative emotionality, and pathways to juvenile recidivism. *Crime Delinq.* 63, 1495–1521. doi: 10.1177/0011128715627469
- Wolff, K. T., Cuevas, C., Intravia, J., Baglivio, M. T., and Epps, N. (2018). The effects of neighborhood context on exposure to adverse childhood experiences (ACE) among adolescents involved in the juvenile justice system: latent classes and contextual effects. *J. Youth Adolesc.* 47, 2279–2300. doi: 10.1007/s10964-018-0887-5
- Yonek, J. C., Dauria, E. F., Kemp, K., Koinis-Mitchell, D., Marshall, B. D., and Tolou-Shams, M. (2019). Factors associated with use of mental health and substance use treatment services by justice-involved youths. *Psychiatr. Serv.* 70, 586–595. doi: 10.1176/appi.ps.201800322
- Zand, D. H., Thomson, N., Cervantes, R., Espiritu, R., Klagholz, D., LaBlanc, L., et al. (2009). The mentor–youth alliance: the role of mentoring relationships in promoting youth competence. *J. Adolesc.* 32, 1–17. doi: 10.1016/j.adolescence.2007.12.006
- Zimet, G. D., Powell, S. S., Farley, G. K., Werkman, S., and Berkoff, K. A. (1990). Psychometric characteristics of the multidimensional scale of perceived social support. *J. Pers. Assess.* 55, 610–617. doi: 10.1207/s15327752jpa5503&4_17